Issue 180

PS

1967 Series

THE PREVENTIVE MAINTENANCE MONTHLY

FEATURE ARTICLE
CAYUSE
PAGES 2-13

YOUR PM MEANS—

EQUIPMENT THAT'S

More and more commanders, ranging from platoon level all the way to the top of the Army, are putting the bee on one real hot topic these days: ***Keep Equipment Ready for Combat.***

Lots of things are happening to keep equipment ready.

Even clubs are being formed to encourage PM. A warrant officer in the Far East got a CLTORF PM Club going. That CLTORF (pronounced Clue-Torf) stands for these words:

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The whole idea is to have fighting equipment that will be ready to fight any time and for as long as it's needed.

Now, how about you? Is your equipment ready? PM every day the CLTORF way can make the difference.

For a dope sheet on the CLTORF PM Club, write to MSG Half-Mast at PS Magazine.

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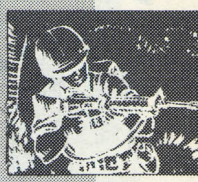

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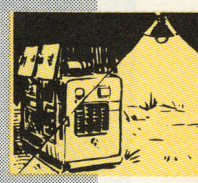

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When this compact of the choppers enters your traffic pattern get set for a new experience. This gem was designed for performance and easy maintenance.

Imagine — there're no grease fittings to lube, no control cables to check tension on and practically no hydraulic system to service. With a Daily, (no Intermediate) and a 300-hr Periodic inspection you can see a crew chief's got it made in the shade.

There is no lube chart but you do have a service chart. Fill 'er up with JP-4 fuel, MIL-L-7808 oil for the engine, MIL-L-23699 for the main transmission and tail rotor transmission — she's ready for action. The only hydraulic oil used, MIL-H-5606, is for the one-way lock-control (uniloc) activator.

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She has to be towed slowly. Avoid sudden starts, stops and sharp turns during towing . . . could turn 'er over!!

MORE

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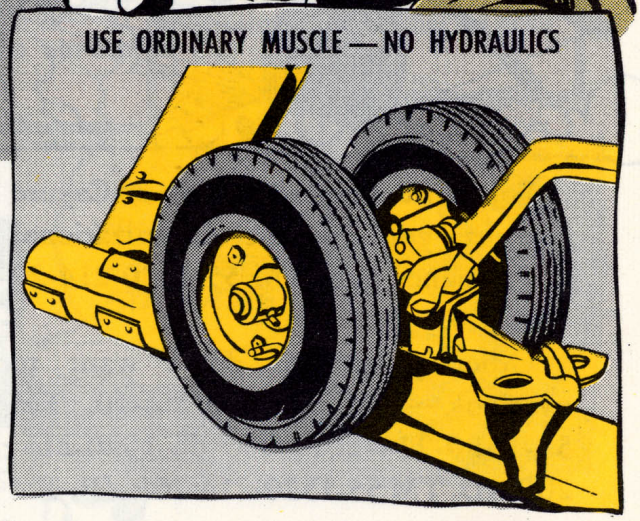
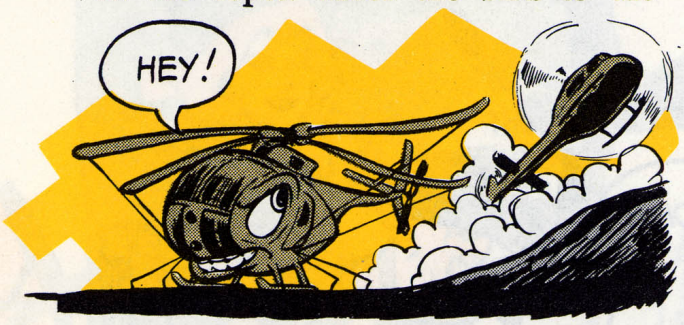


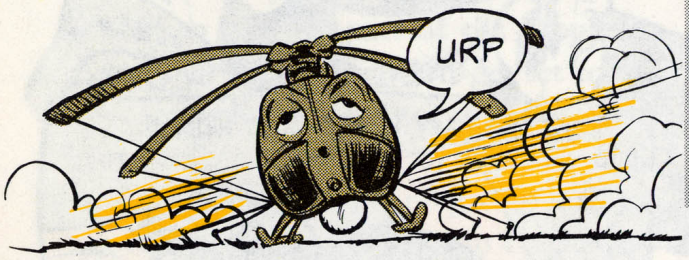
P.S. MORE

Park the bird on level ground. To protect her from air turbulance always tie down the blades, using light tension on the ropes. Moor the bird to the



ground if winds in excess of 25 knots are expected. The bird should be evacuated if winds higher than 40 knots are on the way.

Fuel-up as soon after landing as possible. This not only cuts down on moisture condensation in the fuel tank but also keeps your bird on the heavy side . . . in case of high winds.



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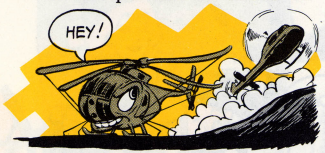

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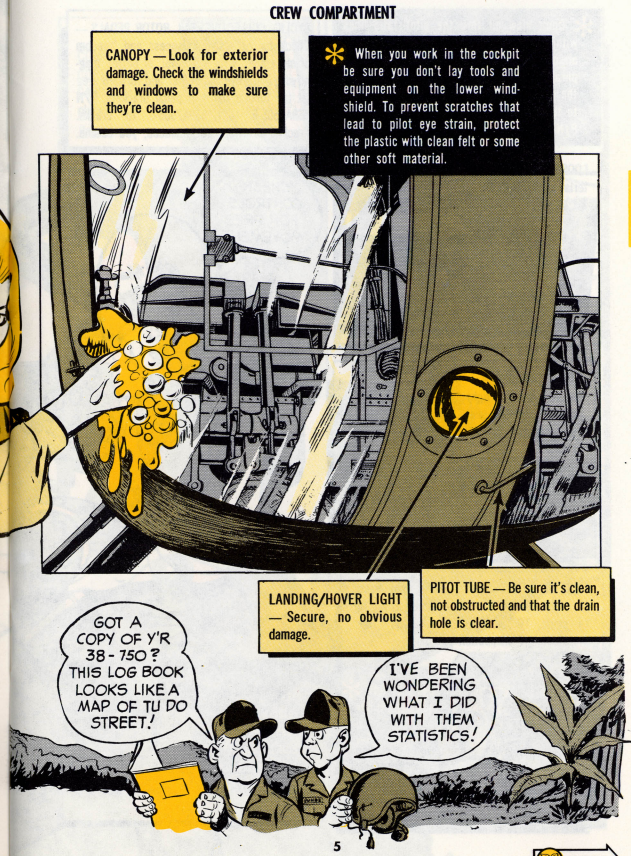
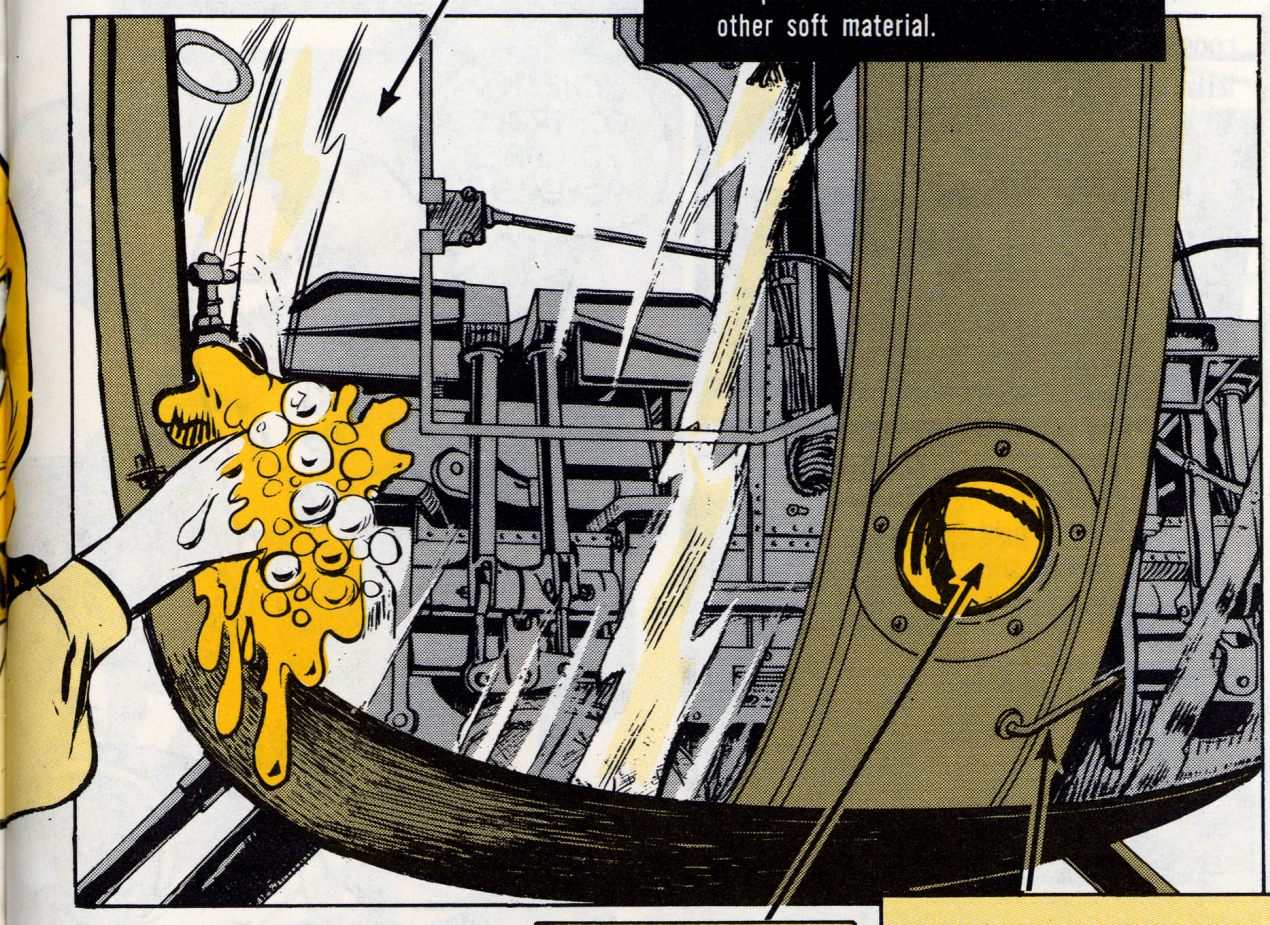


MORE

CREW COMPARTMENT

CANOPY — Look for exterior damage. Check the windshields and windows to make sure they're clean.

* When you work in the cockpit be sure you don't lay tools and equipment on the lower windshield. To prevent scratches that lead to pilot eye strain, protect the plastic with clean felt or some other soft material.



LANDING/HOVER LIGHT — Secure, no obvious damage.

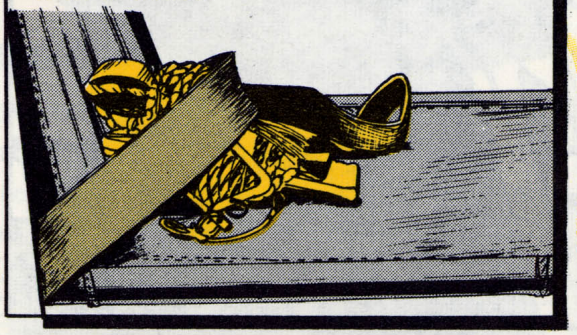
PITOT TUBE — Be sure it's clean, not obstructed and that the drain hole is clear.

PS MORE

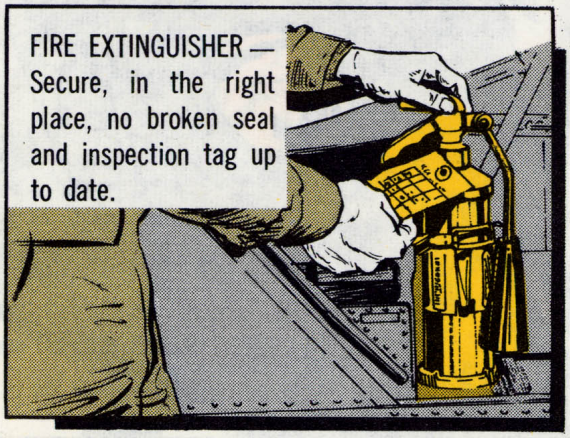
* Don't blow air thru the pitot-static lines without first disconnecting the altimeter and airspeed indicator . . . can ruin instrument diaphragms, for real!! Be sure you don't bend the pitot tube up or down. It's alined parallel to the aircraft center line with special tool, P/N 369A9939.

CYCLIC, COLLECTIVE, TAIL ROTOR PEDALS — Check for excessive looseness and freedom of movement. With a 5-power, or better, magnifying glass; eye the center and forward area (at the tubular joint) of pedal brackets, P/N 369A7505-5, P/N 369A7505-6, for cracks. Cracked brackets get replaced, you betcha.

LOOSE EQUIPMENT — Be sure any loose material is **stowed.**



FIRE EXTINGUISHER — Secure, in the right place, no broken seal and inspection tag up to date.



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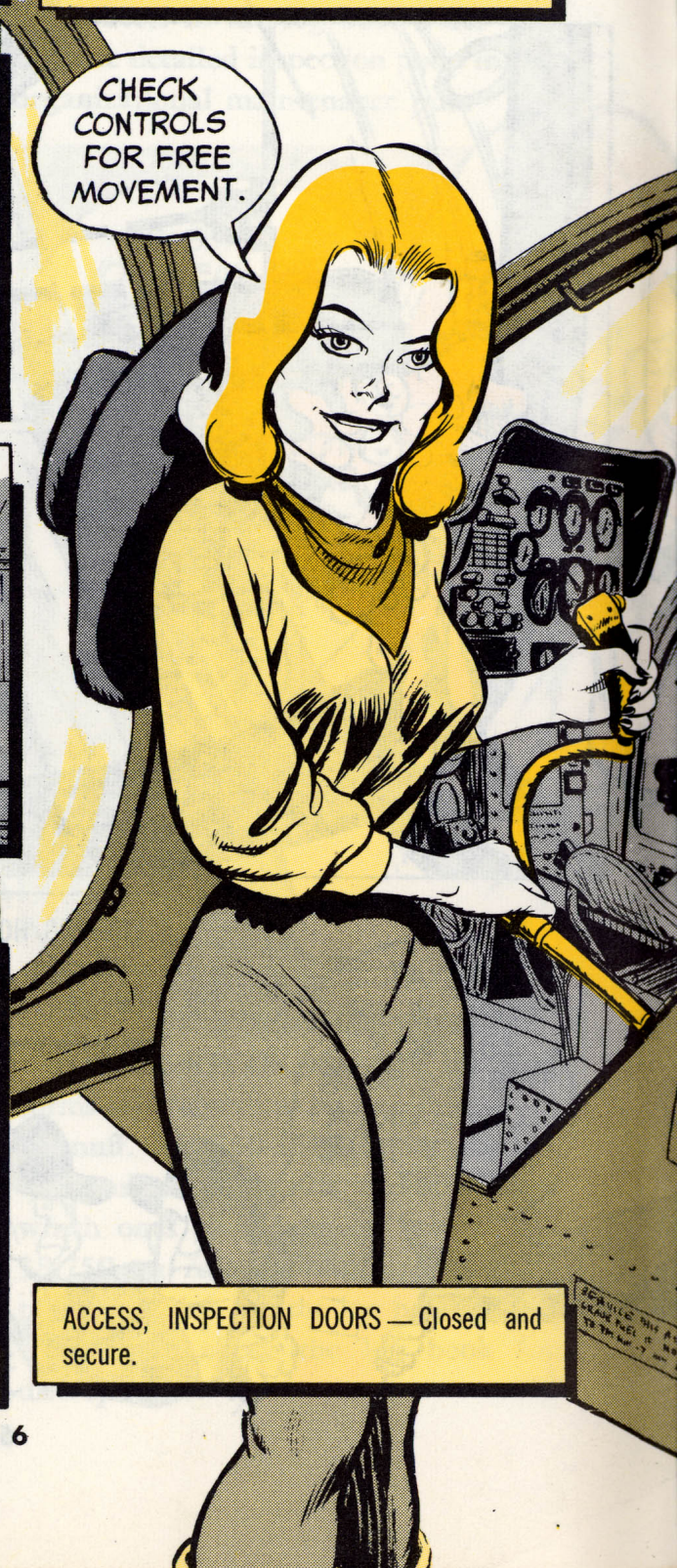

ACCESS, INSPECTION DOORS — Closed and secure.

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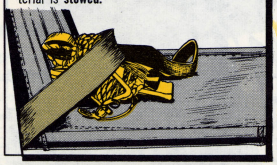

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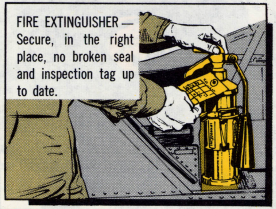

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ACCESS, INSPECTION DOORS — Closed and secure.

COMPASS CORRECTION CARD — In place? Readable?

✻ Never plant your brogans on the tail rotor pedals getting in and out and never use the navigation light as a hand hold. Go easy on the door hinges and never use muscle on the door latches . . . this baby wasn't designed like a tank. Use TLC, p-u-l-l-e-a-s-e!

FUSELAGE, RIGHT SIDE (forward, center, aft) RIGHT MAIN MOTOR, RIGHT LANDING GEAR

ACCESS, INSPECTION, COMPARTMENT DOORS — Check the doors for closure and security . . . 'tis mighty important. The bird can't be flown unless controls access and fuel access doors are closed.

✻ The fuselage is a semi-monocoque design and the tail boom is a monocoque design. This means the skin, especially on the tail boom, is stressed to contribute to the strength of the bird. If you leave pilot or cargo doors off for flight your flying speeds are reduced according to the limits given in the operator's pub.

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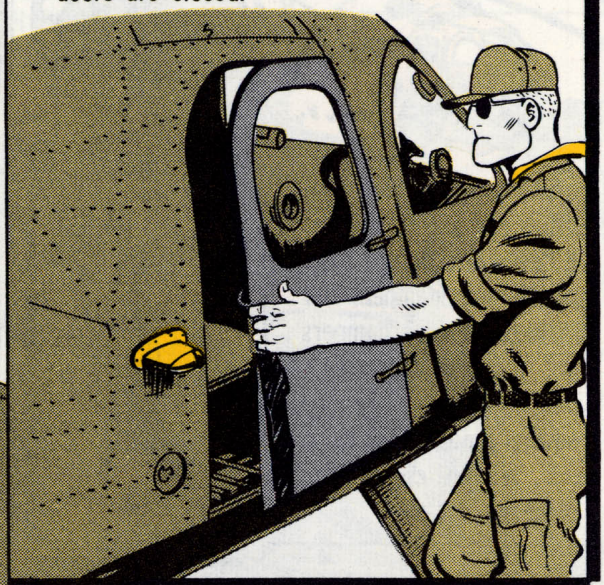

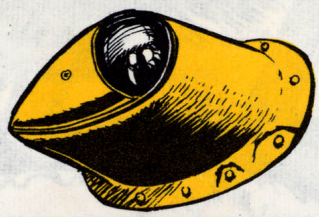

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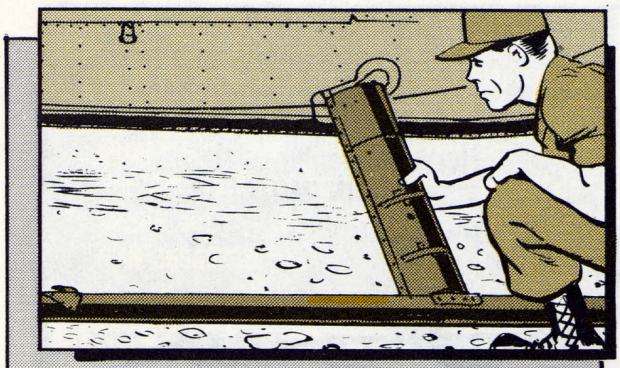


LANDING GEAR — Eye skid tubes and fairings for wear and see that the abrasion strips are in place.

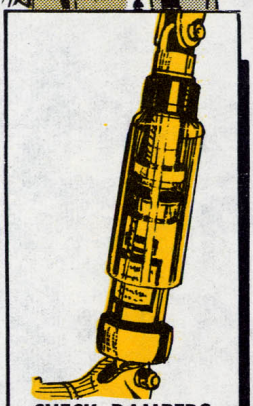
POSITION LIGHT, UPPER ANTICOLLISION LIGHT COVER — Damaged? Secure?

SURE — LOOK FOR YOURSELF.

LANDING GEAR FRONT SHOCK DAMPERS —

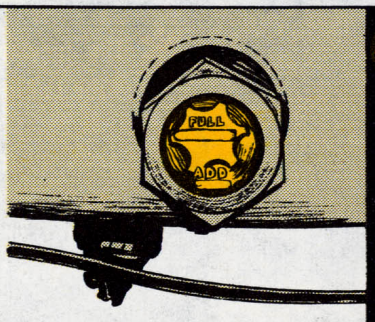
SHE SORTA LOOKS OFF HER FEED, CONNIE!

Stand back and eye your pride and joy. If she has a nosedown, droopy look, check the dampers for leakage. Leaking dampers get replaced because a shot damper can give you severe ground resonance . . . tear a chopper to pieces!!



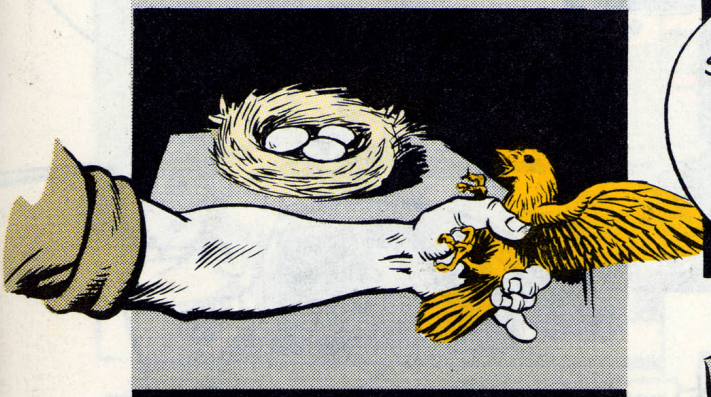
CHECK DAMPERS

MAIN TRANSMISSION — Check the oil level at the sight gage and add oil if the level is down to the ADD line. FSN 9150-985-7099 will get you quart cans of MIL-L-23699. After you add oil be sure the spring-loaded cap closes.



* During rotor coastdown and right after shutdown the oil level may read below FULL but above ADD for a short time — no sweat . . . this is normal. Don't adjust the level or it will go over FULL after she sets awhile.

ENGINE AIR INTAKE PLENUM CHAMBER, INLET SCREEN — Secure? Make sure this area is cleaner than clean — all the way to spotless. Use a vacuum cleaner to get rid of dirt.

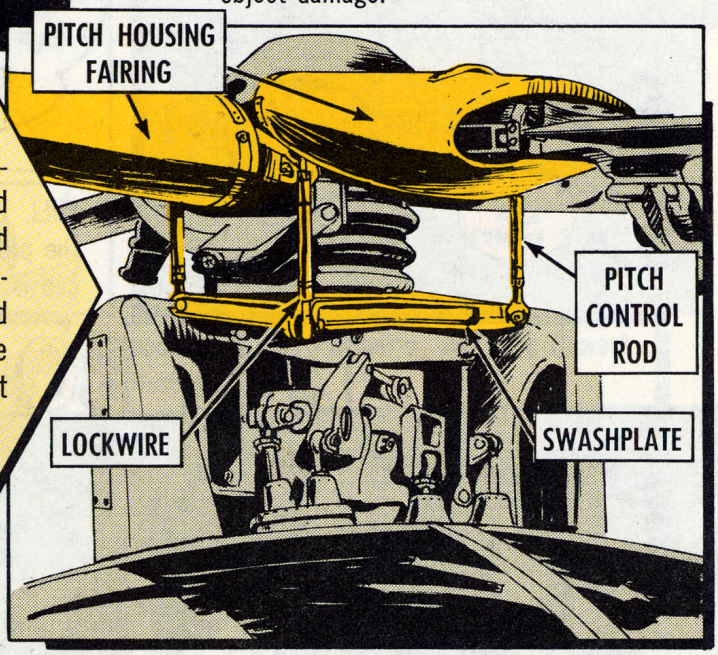


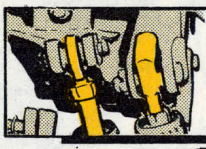
* The dog house (plenum chamber) seems to be a natural for a bird house. They can set up housekeeping in a couple of hours. So, be sure you feel around for nests and other foreign material.

* When you pull maintenance in this engine inlet area or on the main rotor head be sure you don't discard washers, cotter pins, safety wire — anything.

COMPRESSOR INLET — Look for foreign object damage.

MAIN ROTOR HEAD, SWASHPLATE — Check for damage. Eye the hub and pitch housing fairings for damage and security. Check pitch control rod lockwire to see it's intact and the blade and damper attaching pin levers locked. See that the mast support bolts have not rotated or become loose.



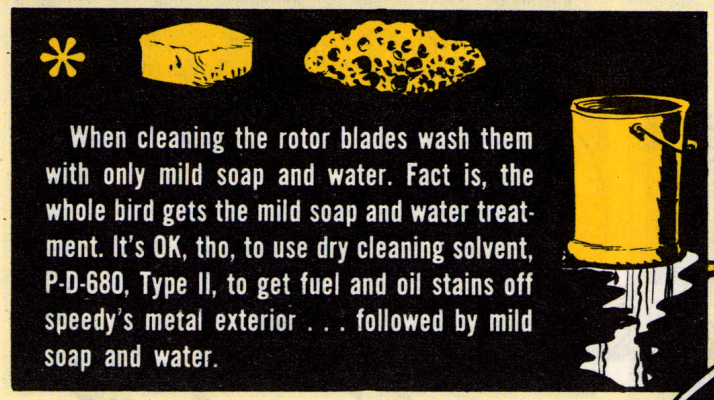


FLIGHT CONTROL RODS, LINKAGE — Check carefully for damage. If you spot any metal defects, the parts get replaced — soonest.

BE SURE TO EYEBALL THE AREA WITHIN ONE INCH OF THE FORK OPENING IN A MACHINED CASTING.

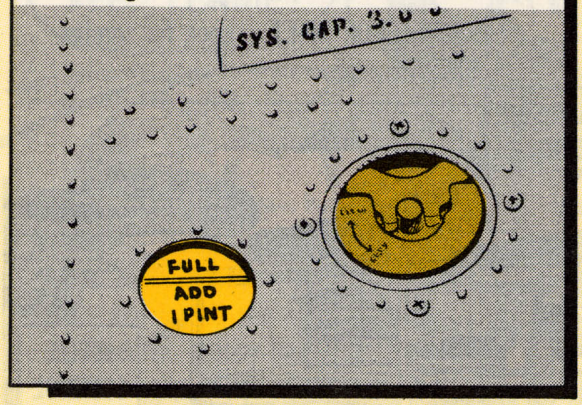
PS MORE

MAIN ROTOR BLADES — From ground level eye the blades for damage and cleanliness.



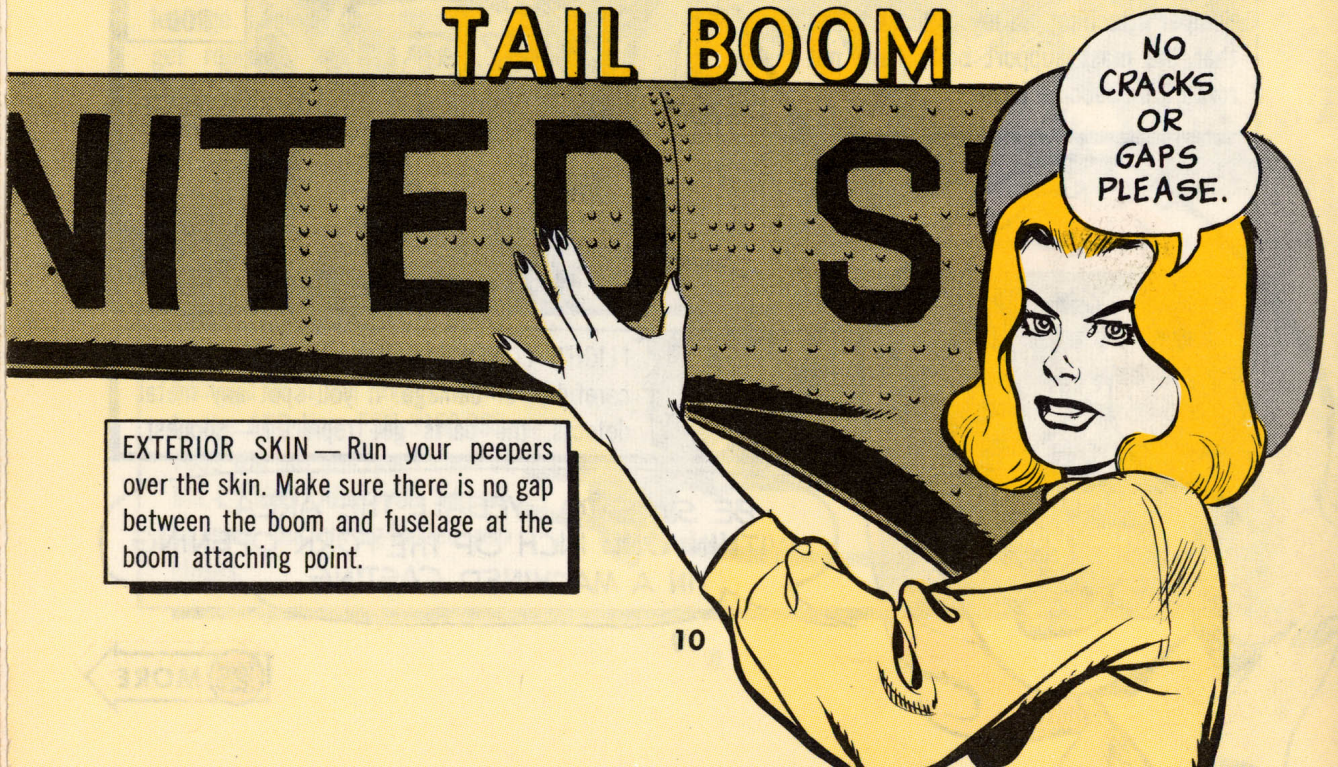
When cleaning the rotor blades wash them with only mild soap and water. Fact is, the whole bird gets the mild soap and water treatment. It's OK, tho, to use dry cleaning solvent, P-D-680, Type II, to get fuel and oil stains off speedy's metal exterior . . . followed by mild soap and water.

ENGINE OIL TANK — Eye the sight gage to check the oil level. If it's not at the proper level add MIL-L-7808 and put the filler cap back tight.



FUEL TANK — Check fuel quantity gage for the proper quantity and make sure the filler cap is on tight.

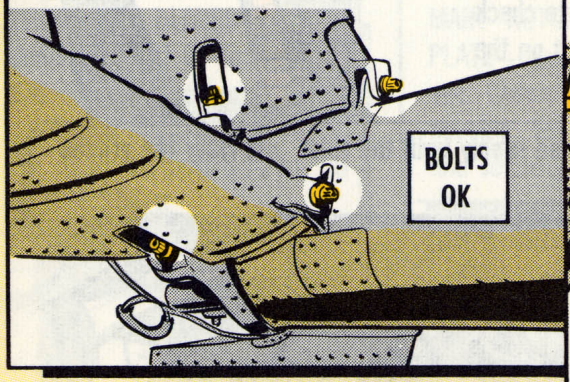
TAIL BOOM



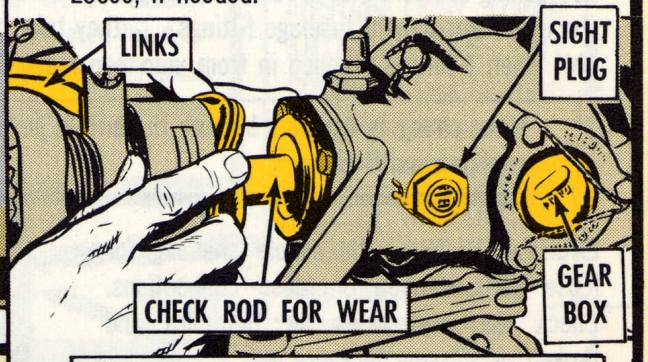
EXTERIOR SKIN — Run your peepers over the skin. Make sure there is no gap between the boom and fuselage at the boom attaching point.

STABILIZERS, TAIL ROTOR TRANSMISSION, ROTOR

HORIZONTAL, VERTICAL STABILIZERS, STRUT — Obvious damage? Attaching bolts rotated, loose?

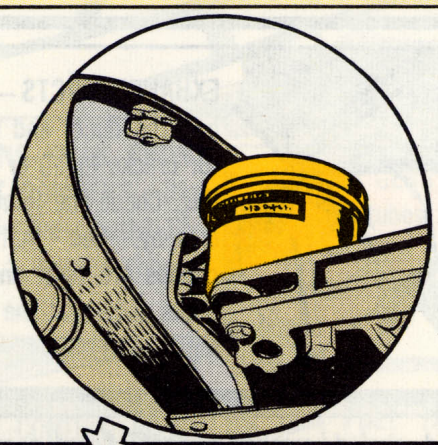


TAIL ROTOR GEAR BOX — Secure. No oil leaks, cracks, nicks, pits or corrosion. Eye sight plug for proper oil level. Make with the MIL-L-23699, if needed.

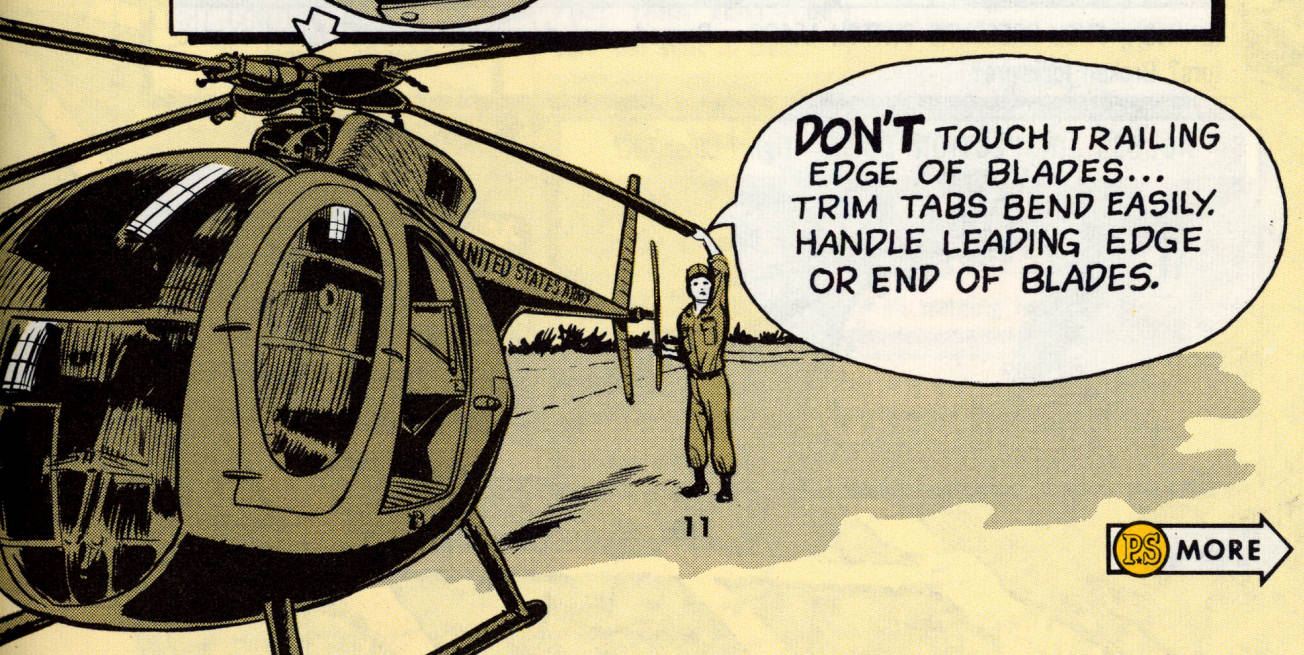


TAIL ROTOR PITCH CONTROL ROD, PITCH CONTROL LINKS — Check rod at the gear box and links at the rotor for excessive bearing wear (0.040-in max axial looseness) freedom of movement and security.

TAIL ROTOR BLADES, HUB, PITCH CONTROL LINKAGE — Look for obvious damage. Hand-turn the rotor a few times and listen for unusual sounds — feel for any binding. Follow the inspection poop in para 8-30 of the maintenance pub.



MAIN ROTOR BLADE DAMPERS — To prevent severe damage to the main rotor head check for right phasing. Check between flights if you think the phase was changed by ground handling. Check by holding the tail rotor and pulling each main rotor blade into the lead position of the damper's low stage (lowest friction sector).



PS MORE

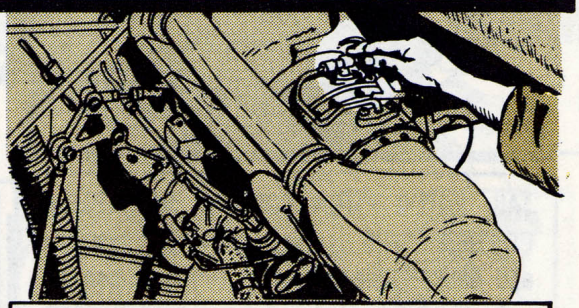
ENGINE AREA

LANDING GEAR REAR SHOCK DAMPERS — Stand back and eye your bird. If she has a nose-high, up-ish look about her, she's got leaking dampers that need to be replaced. Be sure to check the upper attachment fuselage fittings . . . they take it on the chin when a bird is dropped in from ump-teen feet.

When changing dampers be sure the bird is jacked evenly until the skids just clear the ground . . . slips count!!

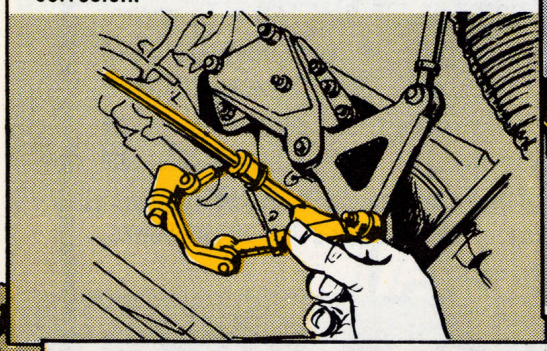
ENGINE — Eagle-eye the whole shebang for loose bolts, broken or loose connections. Check the accessories for tightness and broken or missing lockwire.

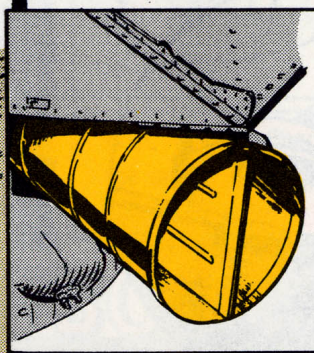
Look for fuel and oil leaks. Run your dukes over the oil cooler and the cooler deflectors for tightness. Check fuel and oil lines for chafing.



ENGINE MOUNTS — Secure? Mounting and support bolts tight (showing no signs of rotation) and in good condition?

N1, N2 CONTROL LINKAGE — Full travel, free operation, secure. Look for binding bearings, cracks, stripped threads, deformed pivot lugs, corrosion.

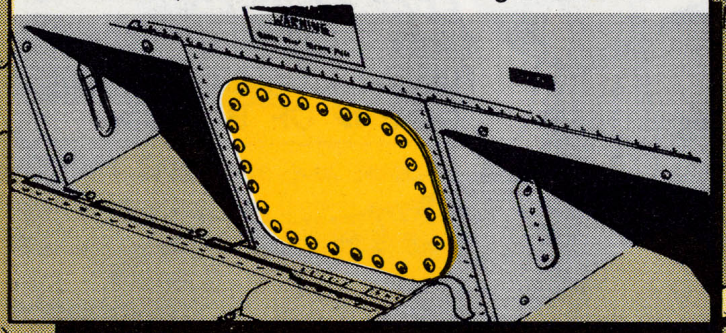




EXHAUST DUCTS — Eyeball the ducts and welds for cracks (ugh!) or buckling. Check the joints for blow-by. See that the clamps are tight and the ducts secure at the fuselage.

IGNITION, FUEL PRESSURE SWITCH LEADS — Burned, chafed, cracked conduit? Loose connectors? Broken lockwire?

ACCESS, INSPECTION DOORS—Tight? Close OK?



*How do you tell a stressed access panel on your guppy? Easy! The stressed panels are retained by screws while the non-stressed panels have quick-opening fasteners.

FUSELAGE

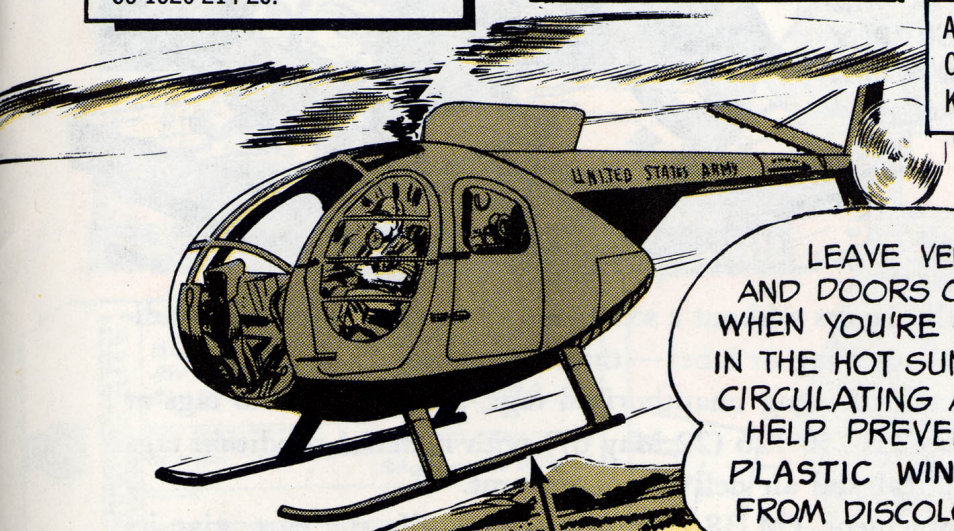
LEFT SIDE
(forward, center, aft)
LEFT MAIN ROTOR,
LEFT LANDING GEAR

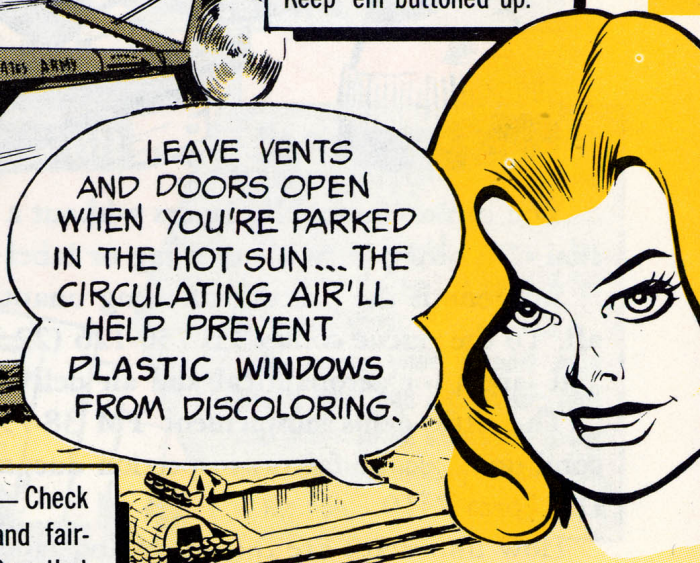
MAIN ROTOR BLADES — Clean? Undamaged? If in doubt about the depth of allowable dents use a dial indicator and follow the limits in para 8-10 of TM 55-1520-214-20.

MAIN ROTOR HEAD, SWASHPLATE — Eye the area for damage. Check the hub and pitch housing fairings for damage and security.

POSITION LIGHT, LOWER ANTICOLLISION LIGHT COVER — Check for tightness and damage.

ACCESS, INSPECTION, COMPARTMENT DOORS — Keep 'em buttoned up.

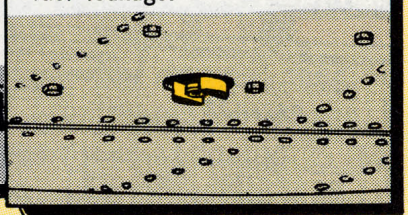




LANDING GEAR FRONT SHOCK DAMPERS — Bird down in the mouth? She needs a damper change, man!

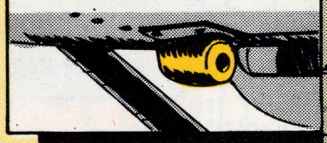
LANDING GEAR — Check the skid tubes and fairings for wear. See that the abrasion strips are in place.

FUEL DRAIN — Tap the drain to check for water content. Eye the bottom of the fuselage for fuel leakage.



FLIGHT CONTROL RODS, LINKAGE — No damage allowed. Be sure to check the area within 1 inch of the fork opening in a machined casting.

FUEL TANK VENT — Be sure the vent is clear.



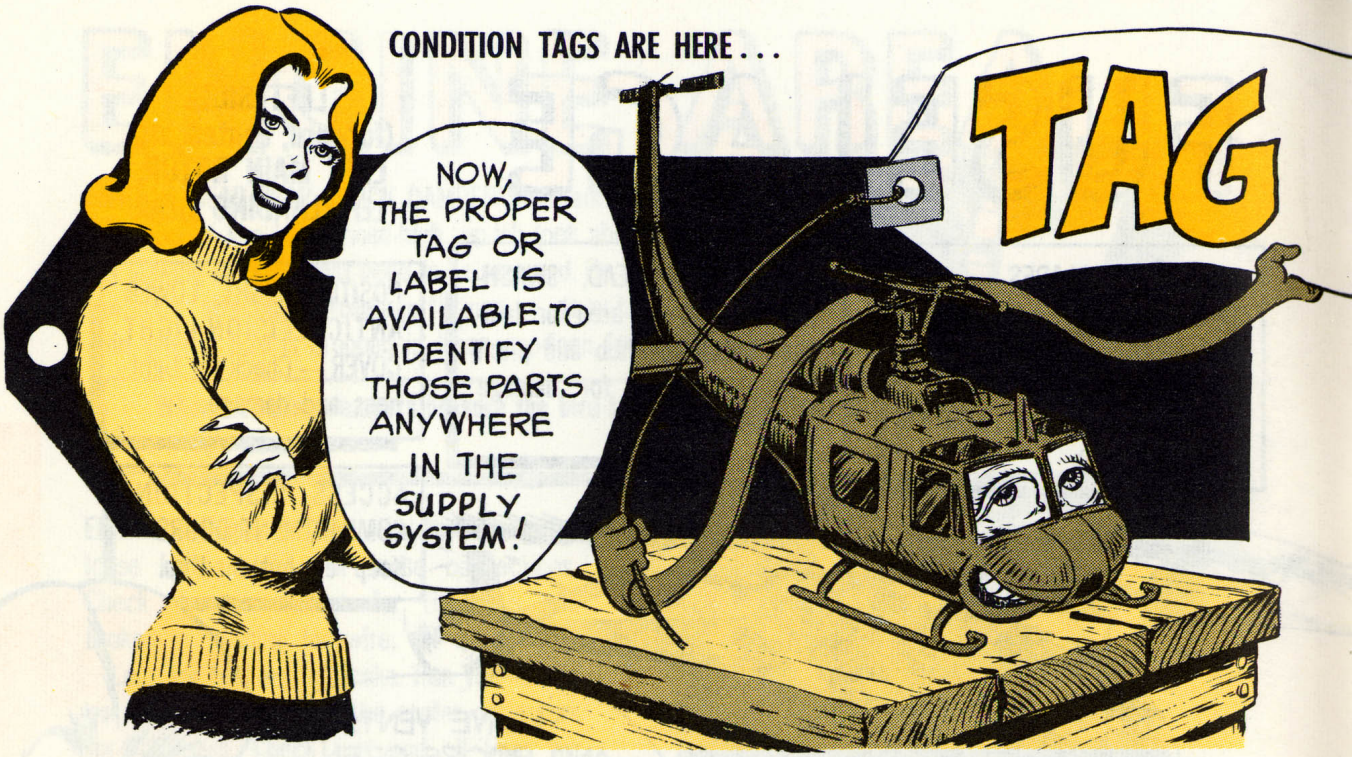
POWER ON

WARNING LIGHTS — Push light test switch to check all warning lights.

INTERIOR LIGHTS — Eye panel, console, compass and utility lights for operation.

EXTERIOR LIGHTS — Check the landing, position and anticollision lights for operation.

PS END



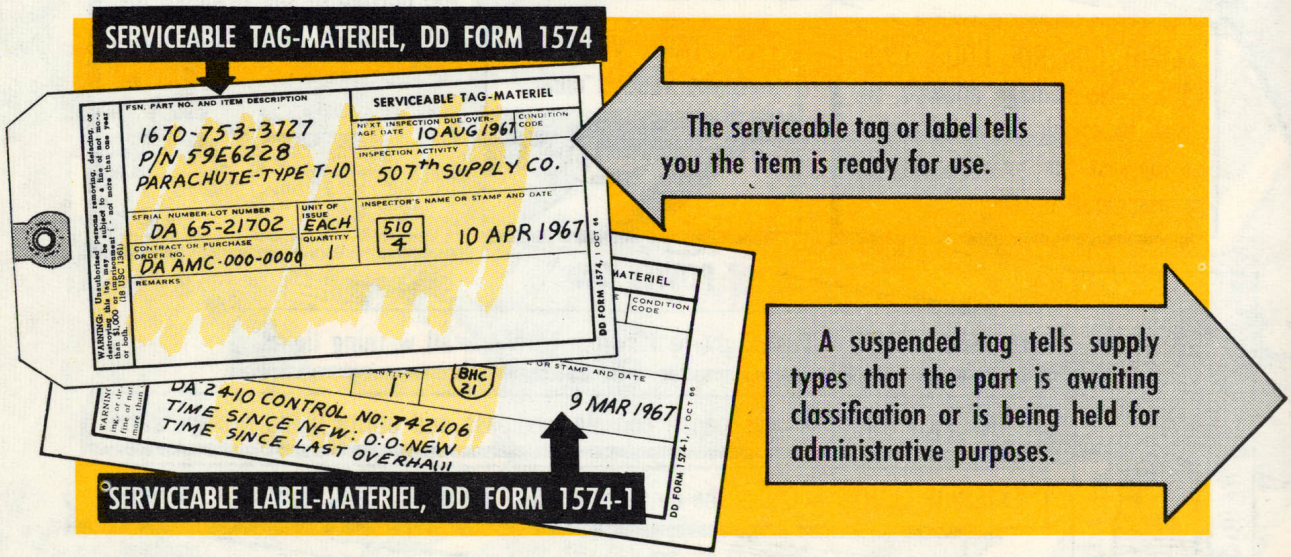
You can no more tell players without a score card than you can tell the condition of a bird part without a tag or label—that's for sure.

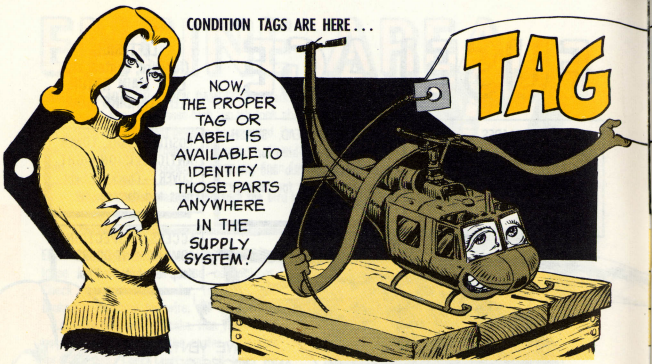
So, gone is the practice of using unauthorized tags, plain tags or no tags at all. To the rescue comes TB 750-126 (22 May 67) with materiel condition tags and labels for aeronautical and air delivery equipment.

The little gems supplement TM 38-750 forms to identify the part, give its condition, useage factor, inspection due, modification needed and a reference to DA Form 2410.

How important are these tags and labels? Well, tagged parts in supply gives you the score at a glance. They save umpteen hours of opening containers and unnecessary tear down time . . . much moola.

Here's how the five tags and labels stack up.





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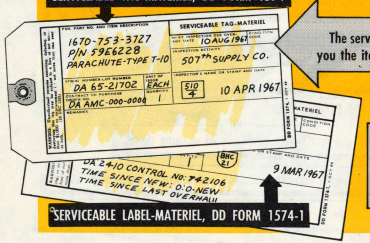
SERVICEABLE TAG-MATERIEL, DD FORM 1574



The serviceable tag or label tells you the item is ready for use.

A suspended tag tells supply types that the part is awaiting classification or is being held for administrative purposes.

SERVICEABLE LABEL-MATERIEL, DD FORM 1574-1

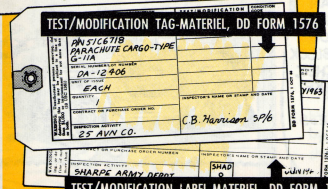
IT, MAN!

You're sure to score a hit with support by using these babies. To get 'em just list the form number plus the quantity you need on a DA Form 17.

Send it thru channels to—

Commanding Officer
US AG Publications Center
1655 Woodson Road
St. Louis, Missouri 63114

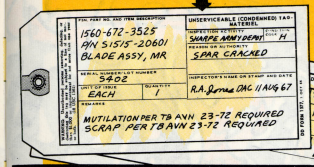
TEST/MODIFICATION TAG-MATERIEL, DD FORM 1576



Test/modification tags are used for tests or where a modification has to be done.

TEST/MODIFICATION LABEL-MATERIEL, DD FORM 1576-1

UNSERVICEABLE (CONDEMNED) TAG-MATERIEL, DD FORM 1577



The unserviceable (condemned) tag means the part has had it and can't be overhauled.

The unserviceable (reparable) tag means the part is headed for the repair shop.

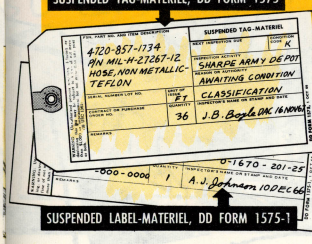
Of course your support only knows what you put on the tags and labels so be sure you fill out every block according to the poop in the pub.

UNSERVICEABLE (CONDEMNED) LABEL-MATERIEL, DD FORM 1577-1

UNSERVICEABLE (REPARABLE) TAG-MATERIEL, DD FORM 1577-2

UNSERVICEABLE (REPARABLE) LABEL-MATERIEL, DD FORM 1577-3

SUSPENDED TAG-MATERIEL, DD FORM 1575



SUSPENDED LABEL-MATERIEL, DD FORM 1575-1

EYE THIS TB

To find out what materiel condition tag a part rates, based on useage, be sure you read TB 55-1500-300-25 (Mar 67) on component replacement and reuse procedures. One point, tho. Be sure you eye Change 1 (20 Jun 67) to the TB because the tag number given in para 7(b)1 is correctly identified as—Serviceable Tag-Materiel, DD Form 1574.

IT, MAN!

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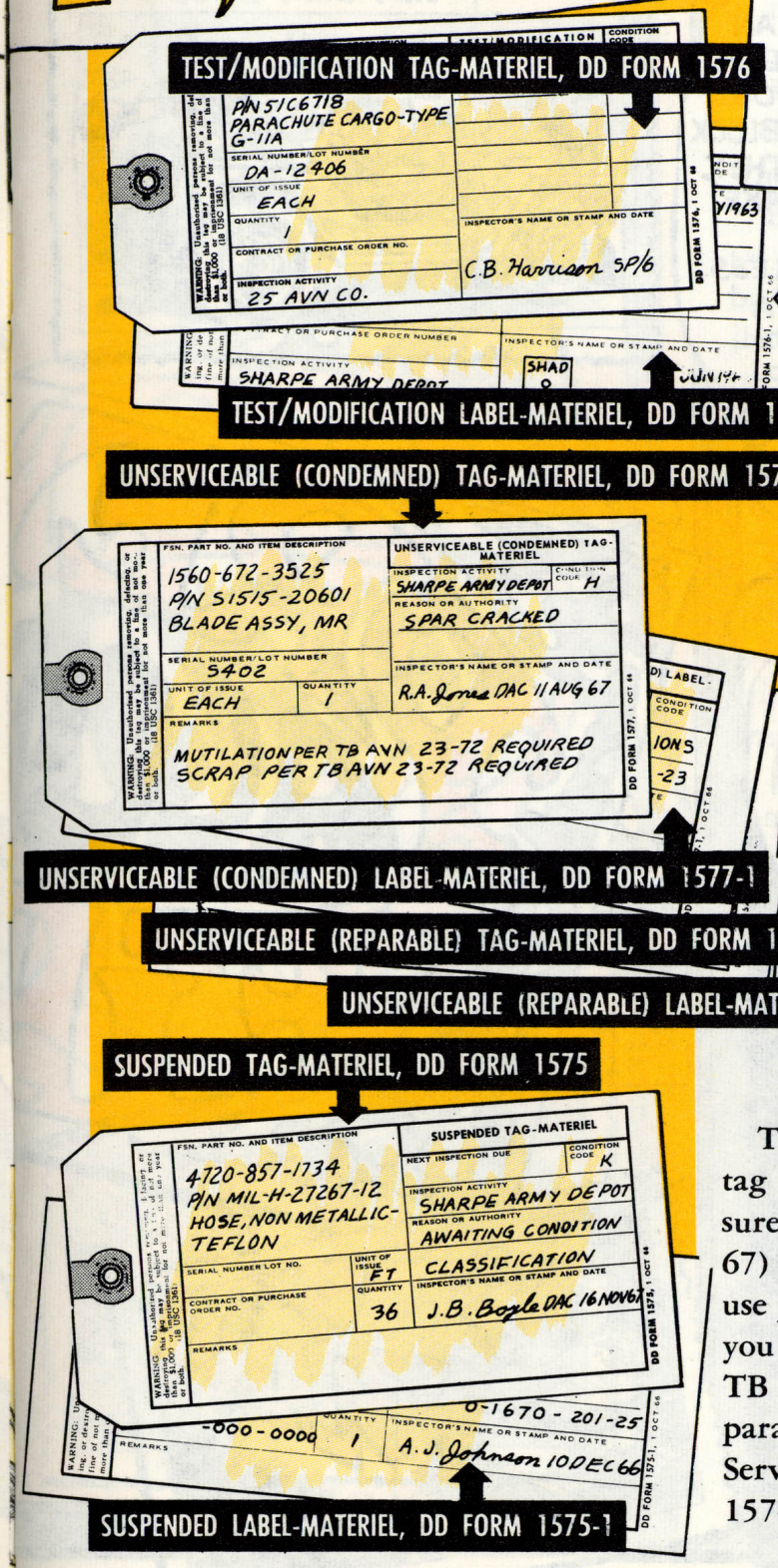
St. Louis, Missouri 63114



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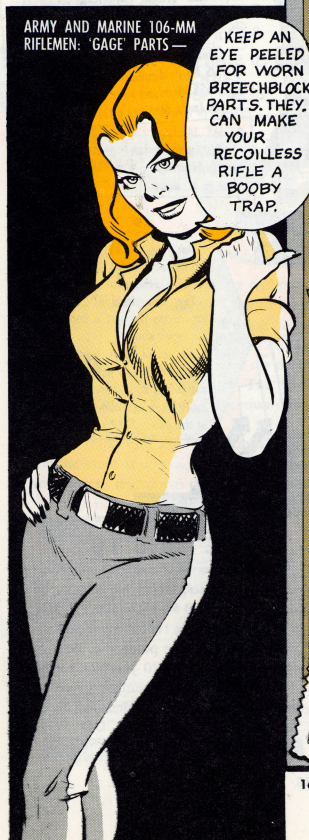
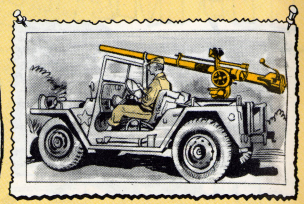
FIRE POWER
ARMY AND MARINE 106-MM RIFLEMEN: 'GAGE' PARTS—
KEEP AN EYE PEELED FOR WORN BREECHBLOCK PARTS. THEY CAN MAKE YOUR RECOILLESS RIFLE A BOOBY TRAP.
BULLETIN
BLAMM

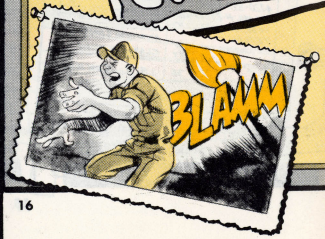
BULLETIN BOARD

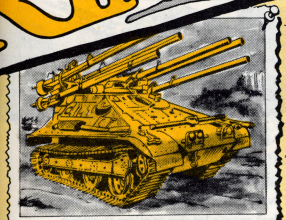




You'll Find This Same Poop in TB 750-951-4 (1967)

PREVENT ACCIDENTAL FIRING





Few things can shake you like a 106-MM recoilless rifle going off when it's not supposed to . . . no matter if that M40A1 or M40A1C's the ground type or truck-mounted—or the 6-pack variety perched atop the Marine Corps' ONTOS M50 self-propelled rifle.

It can get you coming and going, what with its big backblast and all!

Experience shows that most accidental firings are caused by damaged or badly worn or dirty breechblock parts that can't work right together . . . or maybe a firing cable that's damaged or not adjusted right.

Dirt and nicks you can see with the naked eye, sure, but wear that changes tolerances are pretty hard to detect without a micrometer or gage—which you don't have.

So, here're 5 checkouts you gunners can make to get rid of troublesome parts, using the parts themselves as gages. **Every week**—without fail—pull a crew check. And follow through exactly on the order in which the 5 checks are listed here.

It'll take only a few minutes, but it could mean a lifetime.

Here're the stock numbers for the parts you'll be working with. Army and Marine types firing ground or truck-mounted 106's use TM 9-1000-205-12 (Mar 59) w/2 Changes. Marine-types equipped with the ONTOS use TM-00545B-10 (Dec 63) in conjunction with TM 9-1000-205-12.

MORE

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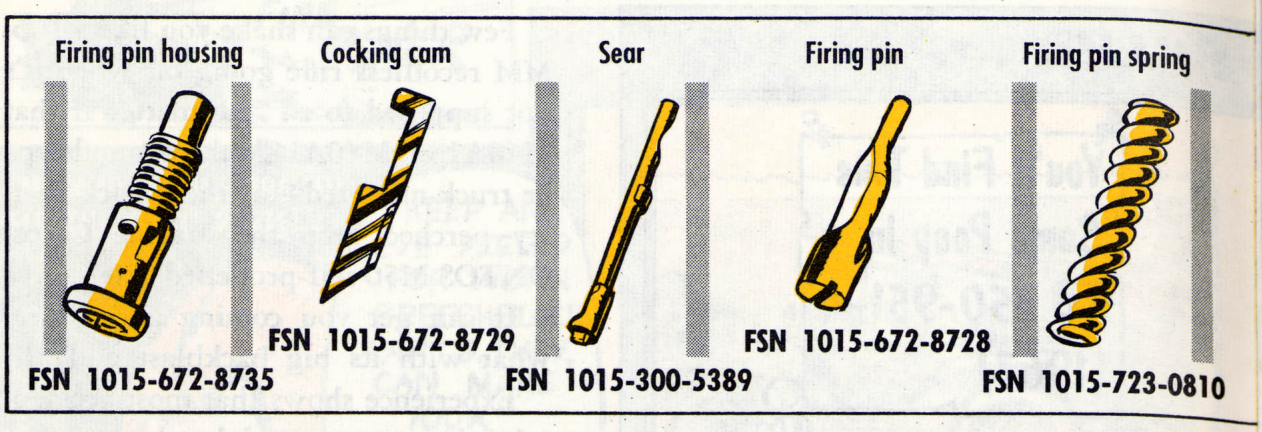
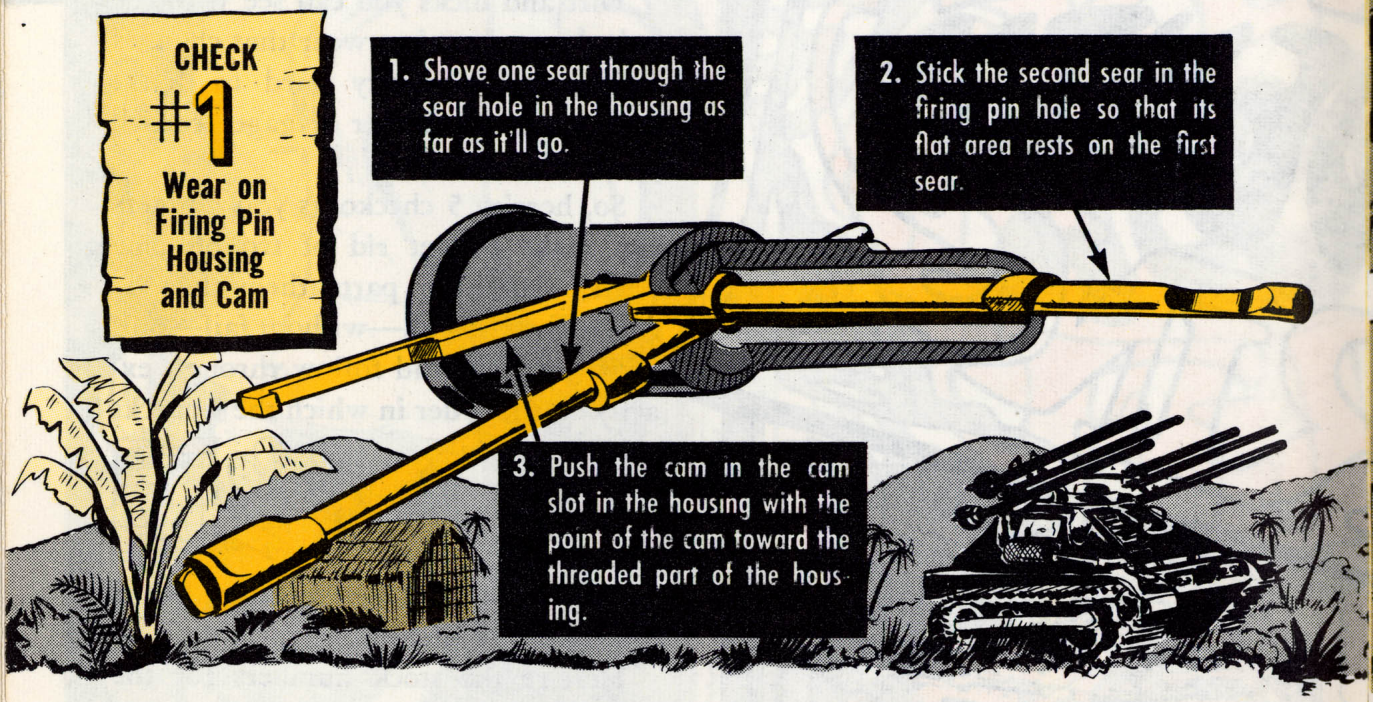
P.S. MORE



To make these checks, you can use parts out of your spares kit or, like on the ONTOS, you can use parts from any of the other 5 weapons. The important thing is to make sure all parts are clean — clean as you can get 'em with solvent and brush — before you start.

One more very important thing — every time you find a bad part, separate it from the good parts. Make sure it doesn't sneak back in your weapon.

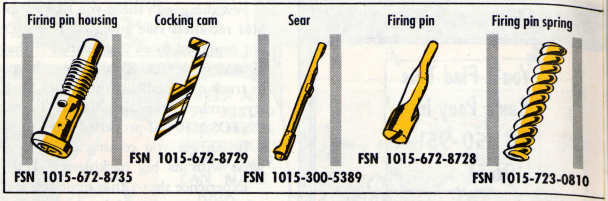
OK, let's get with it.



If the cam won't go through the housing — if it doesn't show at all on the far side — you'll know the cam and the housing are OK to use.

But, if the cam does go through — even a fraction of an inch — try another cam or housing till you get a combination that won't let the cam go through the housing. Any combination of cam and housing that won't let the cam go through is safe to use.

Turn in the cams or housings that don't cut the mustard.



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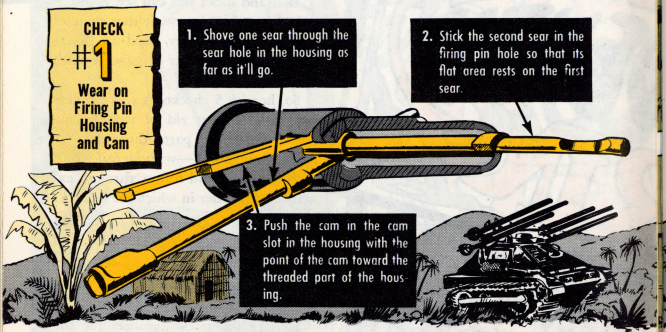

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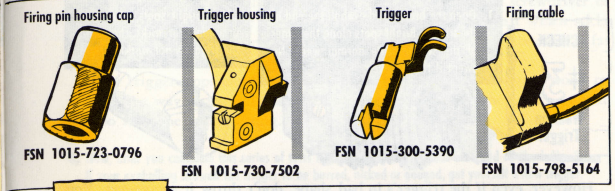
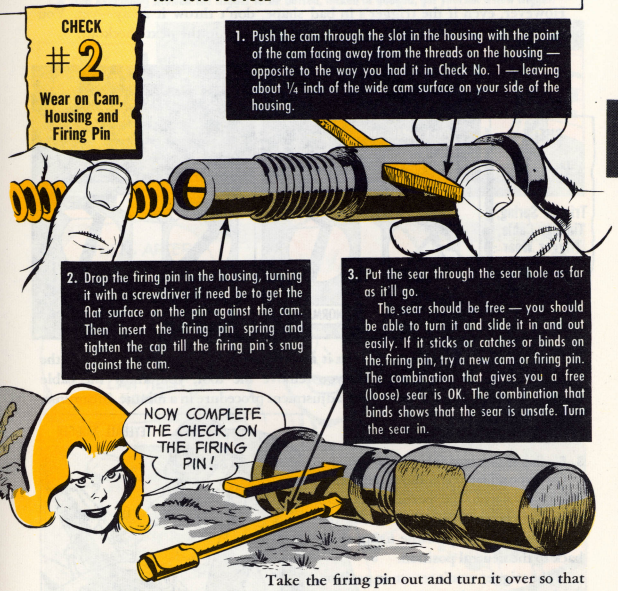


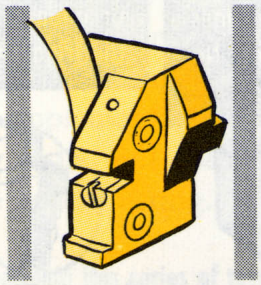


Take the firing pin out and turn it over so that the sear will pass against its opposite side. If either side of the firing pin causes a bind on the sear, replace the firing pin. Be sure you get rid of all firing pins that cause a bind.

MORE

Firing pin housing cap

FSN 1015-723-0796

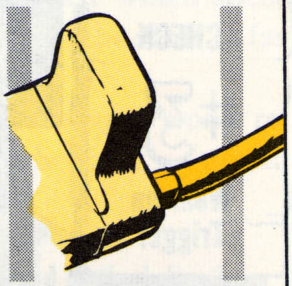


Trigger housing

FSN 1015-730-7502

Trigger

FSN 1015-300-5390



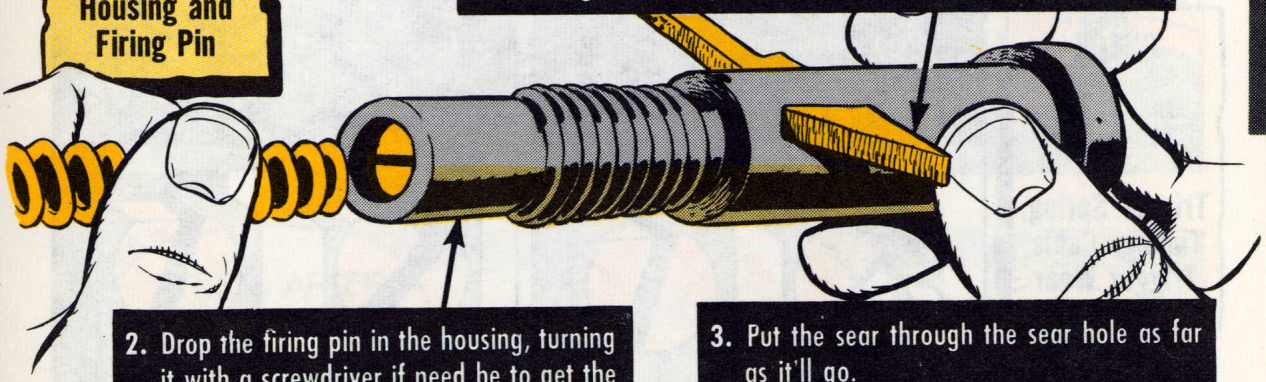
Firing cable

FSN 1015-798-5164

CHECK #2

Wear on Cam, Housing and Firing Pin

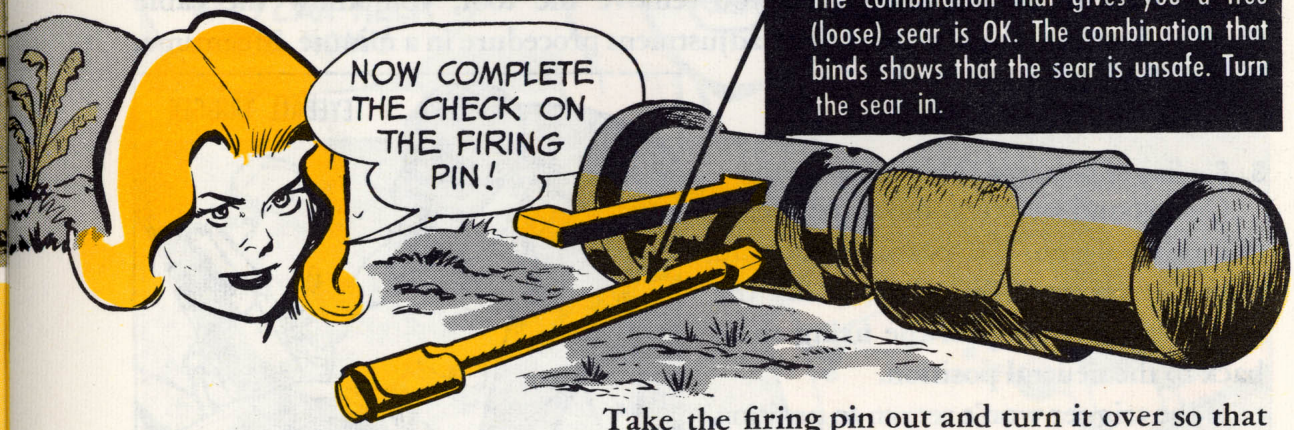
1. Push the cam through the slot in the housing with the point of the cam facing away from the threads on the housing — opposite to the way you had it in Check No. 1 — leaving about ¼ inch of the wide cam surface on your side of the housing.



2. Drop the firing pin in the housing, turning it with a screwdriver if need be to get the flat surface on the pin against the cam. Then insert the firing pin spring and tighten the cap till the firing pin's snug against the cam.

3. Put the sear through the sear hole as far as it'll go.

The sear should be free — you should be able to turn it and slide it in and out easily. If it sticks or catches or binds on the firing pin, try a new cam or firing pin. The combination that gives you a free (loose) sear is OK. The combination that binds shows that the sear is unsafe. Turn the sear in.

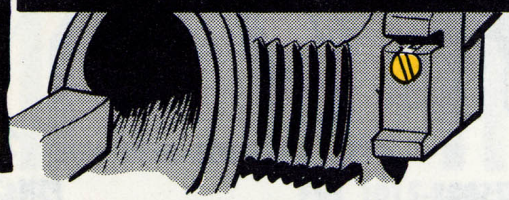


Take the firing pin out and turn it over so that the sear will pass against its opposite side. If either side of the firing pin causes a bind on the sear, replace the firing pin. Be sure you get rid of all firing pins that cause a bind.

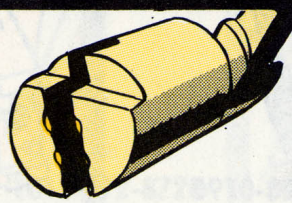
PS MORE

CHECK #3 Wear on Trigger

1. Open the breech and eyeball the end of the trigger. Bright spots along the edges of the slot indicate normal wear. No sweat if they're even.



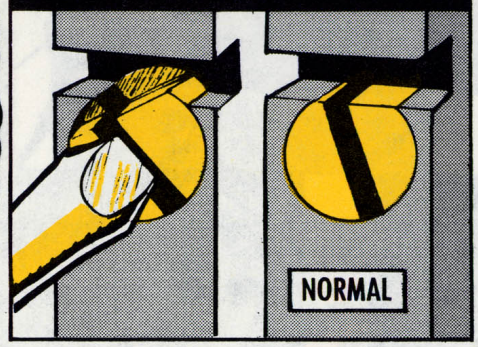
But bright spots, plus burrs or gouges or nicks show that the trigger's not working right.



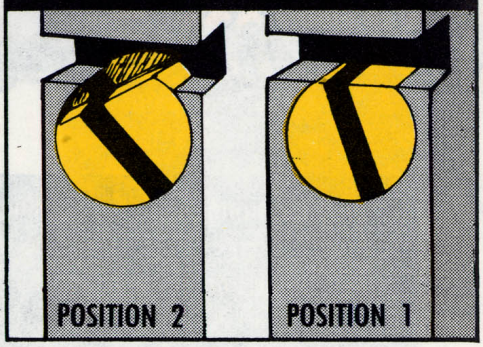
However, even if the trigger's in bad shape, don't throw it away—yet. You need it to find out what's causing this damage—like in the next checkout.

CHECK #4 Trigger Spring, Timing, Cable, Trigger Wear

1. **Trigger Spring** — Turn the trigger with a screwdriver or such-like to the fired position. If the trigger won't return to normal position, the spring's weak or busted. Replace the spring.



2. **Timing Test** — The firing cable can hold the trigger in a forward position. Eyeball the end of the trigger. The flat surface of the trigger should be flush with the flat on the trigger housing.

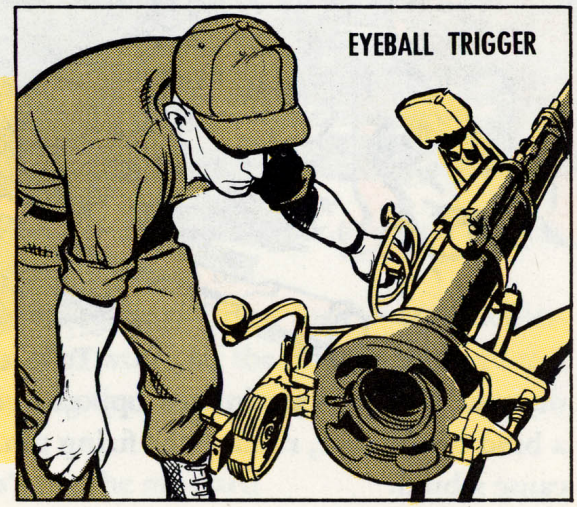


If the trigger's in position 2, turn it to position 1 with a screwdriver. If the trigger returns to position 2 after you remove the tool, you know the cable needs adjusting. (You'll get to the adjustment procedure in a minute. Meantime, keep on checking.)

3. Binding or Damaged Firing Cable —

On ground or truck-mounted weapons only: Open the breechblock and push the vernier firing shaft to fire the rifle. Then slowly pull the firing shaft back to the neutral position.

If the trigger won't return to position 1, the cable needs replacing—it's beyond adjusting.



On ONTOS weapons only: Open the breechblock and use a screwdriver or similar tool to operate the trigger by turning the solenoid shaft which sticks out from the bottom of the mount under each of the 6 rifles. Turn the shaft as far as it'll go and then let it return slowly.

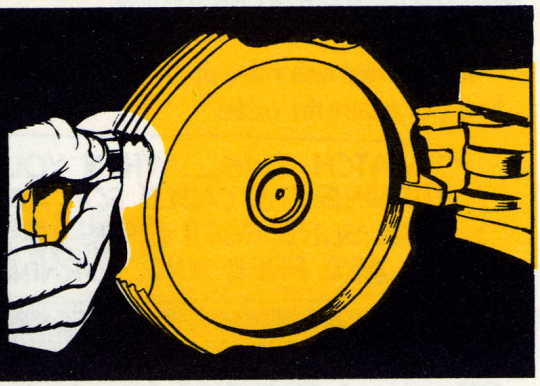
If the trigger stops moving, never force it. However, if the trigger won't return all the way to normal position 1, you've got to replace the cable . . . again, it's too far gone for adjusting.

4. Now, after you complete this series of tests in Check No. 4, backtrack a second to Check No. 3. If your eyeballing showed the trigger to be burred, nicked or gouged, get yourself a new trigger.

CHECK #5

Binding on the Sear (With The Sear Installed)

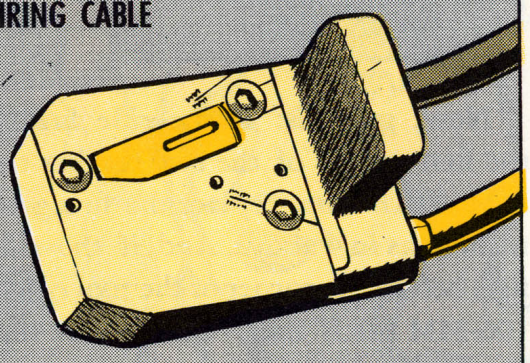
Open the breech and grab the sear with your thumb and forefinger. The sear should move back and forth freely. If it won't move freely, take the breech apart and go through Checks No. 1 and No. 2 again.



ADJUSTING THE FIRING CABLE

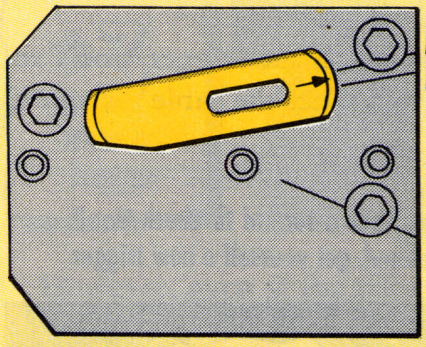
Here's what you do:

Open the breech. Put the firing cable adjusting tool (FSN 4933-730-7536) on the firing cable operating lever so that the projection on the tool enters the slot in the lever.



PS MORE

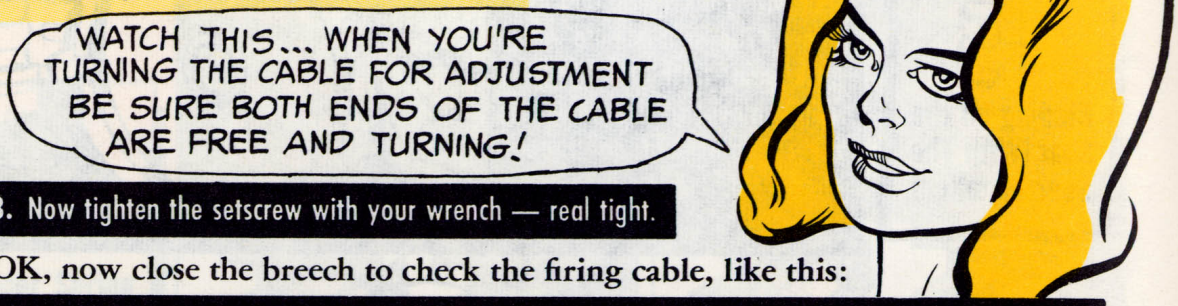
The arrow on the end of the tool should fall between the MIN PLAY and MAX PLAY lines on the FIRE side of the quick-breakdown sleeve cover.



If the arrow won't line up this way, here's how you adjust the cable:

1. Take out the firing cable locking setscrew in the right side of the quick-breakdown sleeve with your combination wrench (FSN 4933-730-7537).

2. Turn the firing cable in or out of the quick-breakdown sleeve by hand till you line up the arrow between the MIN PLAY and MAX PLAY lines. If the cable end's tight, loosen it with the wrench. The trigger should begin to turn as the arrow meets and passes the MAX PLAY line.

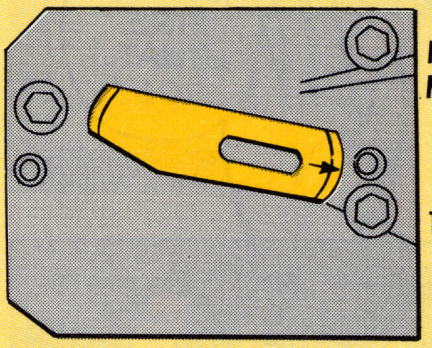


3. Now tighten the setscrew with your wrench — real tight.

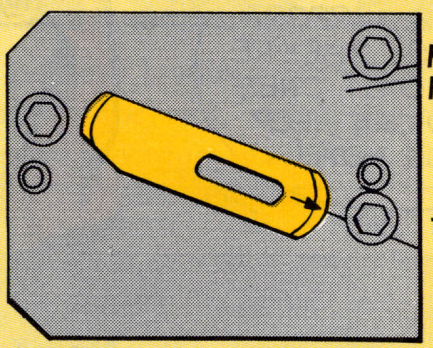
OK, now close the breech to check the firing cable, like this:

4. Fire the rifle by turning the adjusting tool toward the FIRE line on the quick-breakdown sleeve cover. The trigger should turn the sear — listen for the fall of the firing pin! The rifle should fire after the first corner of the tool reaches the 106-MM FIRE line and **before** the arrow on the tool passes the 106-MM FIRE line.

THE RIFLE SHOULD FIRE BETWEEN HERE . . .

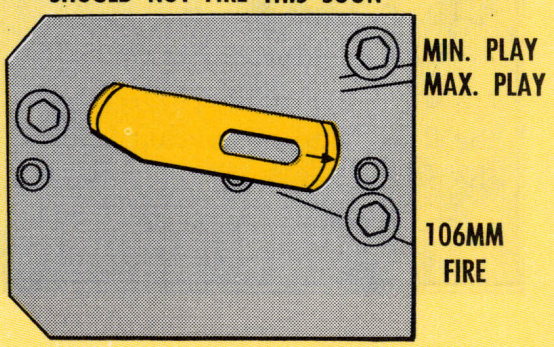


. . . . AND HERE



Now, get this: If the rifle fires before the first corner of the tool reaches the 106-MM FIRE line, replace the firing pin and recheck as in 4 above. And, if the rifle still fires before the corner of the tool reaches the 106-MM FIRE line—after you've replaced the firing pin—get yourself a new sear.

SHOULD NOT FIRE THIS SOON



CABLE PM TIPS

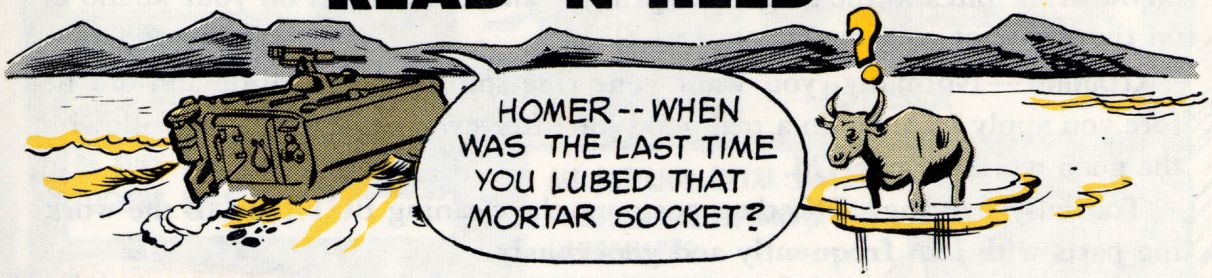
Never forget that an injured cable can cause accidental firing. Educate everybody in your outfit—and pass the word along to your support types, too—to handle that firing cable real gentle-like at all times.

This means when you take the cable out for cleaning and such-like, never twist it up. Never walk on it or let a vehicle run over it. And keep it free of grit and grease that'll chew out the rubber sheathing.

On-your-toes PM—cleaning and lubing the breechblock parts after every firing like the LO calls for, and making these parts checkouts every week will help you stamp out premature firings.

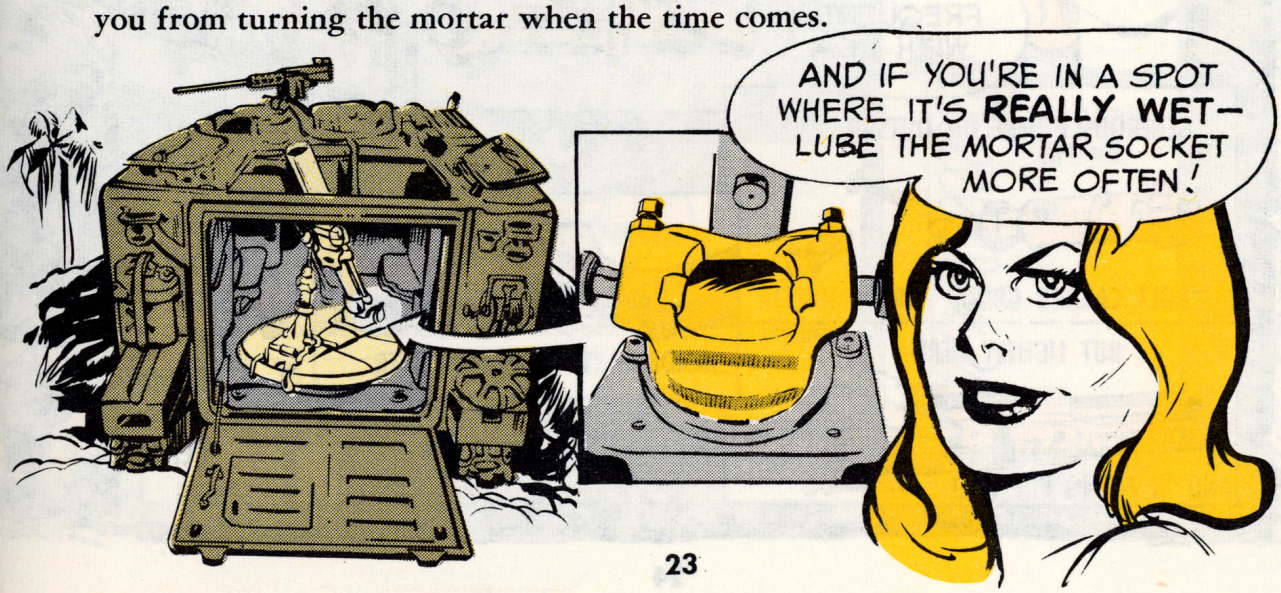
Worth the trouble?

READ 'N HEED



When you're where the dampness is, that's the time to pay close attention to the LO for your M107-mm SP mortar. That means Ch 1 (Oct 63) to LO 9-2300-224-12 for the M106 and LO 9-2300-224-12/2 (Oct 65) for the M106A1 carrier.

One place you want to eyeball on the LO is where it says to use GAA quarterly on the part of the mortar socket that contacts the bridge turntable. It may take a few minutes, but it's worth it to keep away rust—rust that might keep you from turning the mortar when the time comes.



Here're a couple-three lube tips that'll help you and your armorer get the most out of using LSA (Lube Oil, Semi-fluid, Automatic Weapons, MIL-L-46000A) on your 5.56-MM rifle — now that it's LSA all the way for the M16A1 zap-machine anywhere but in real cold-weather areas.

FOR VIETNAM AND ANY PLACE IT NEVER GETS DOWN TO ZERO:

M16A1

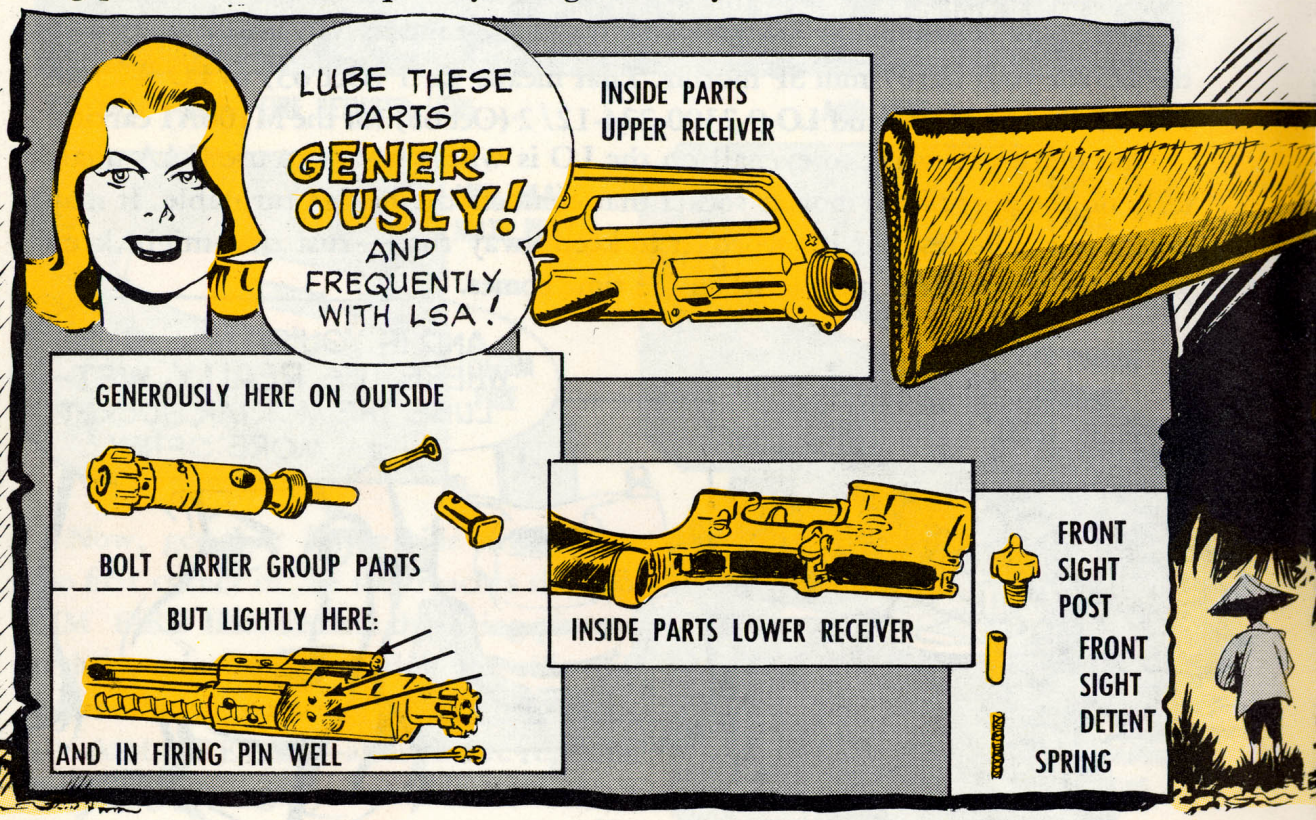
Yessir, LSA's here to stay. It does a better lubing job on working parts, especially in a muggy-wet climate like Vietnam's . . . it lasts longer . . . it really protects metal surfaces. Here're the stock numbers that'll fetch it for you: FSN 9150-889-3522 — 4-oz tube; FSN 9150-687-4241 — 1-qt can; FSN 9150-753-4686 — 1-gal can.

WHERE AND HOW MUCH LSA?

The big trick to using LSA is to get plenty of it on the working parts — like those inside the upper and lower receivers — and very light doses in other places — like the bore and chamber, inside the carrier key, inside the bolt and on the firing pin and the magazine spring — and none at all on your ammo or on the inside of your magazine.

CLEANING — Normally, you want your rifle spitting clean inside and out before you apply LSA. So do a real good job after every firing mission, following the good word in your TM.

Too busy fighting? OK, then postpone the cleaning BUT lube all the working parts with LSA **frequently** and **generously**.



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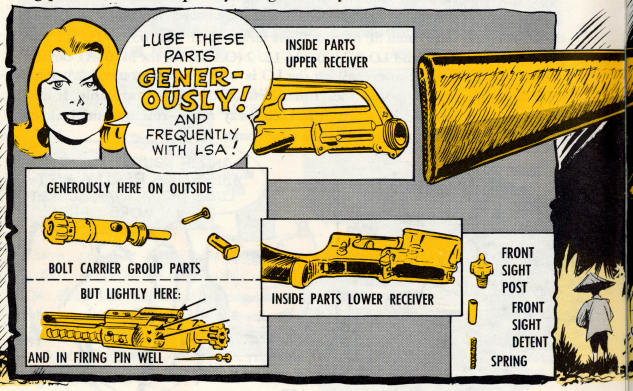
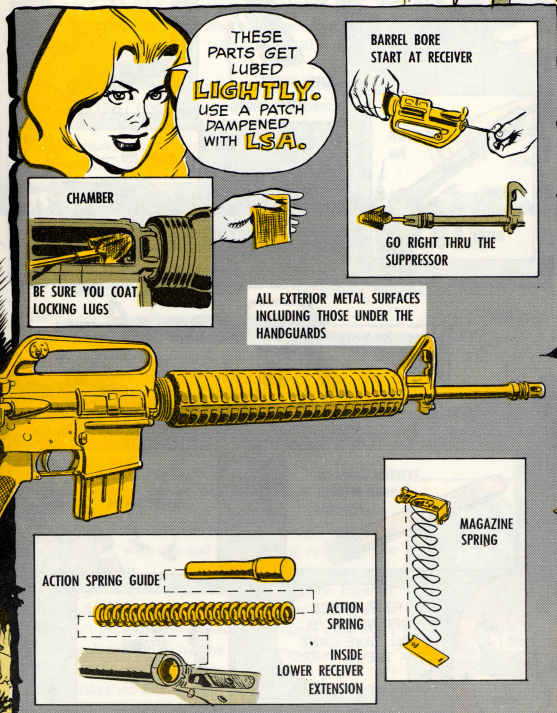
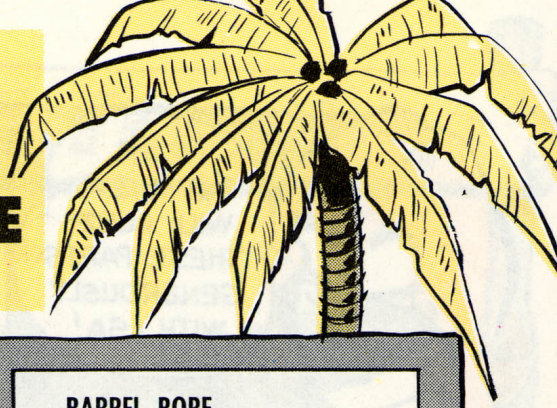


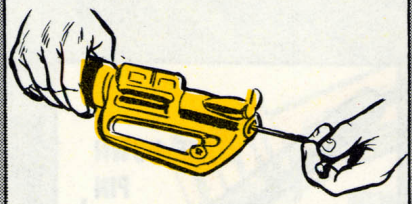


LSA LUBE GUIDE



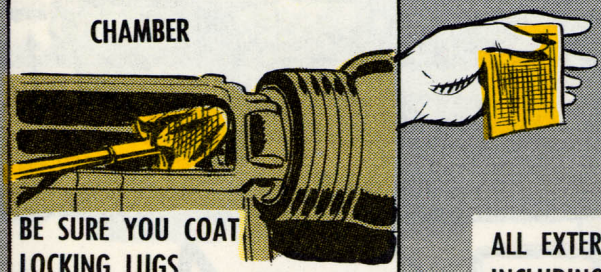
THESE PARTS GET LUBED **LIGHTLY.** USE A PATCH DAMPENED WITH **LSA.**

BARREL BORE START AT RECEIVER



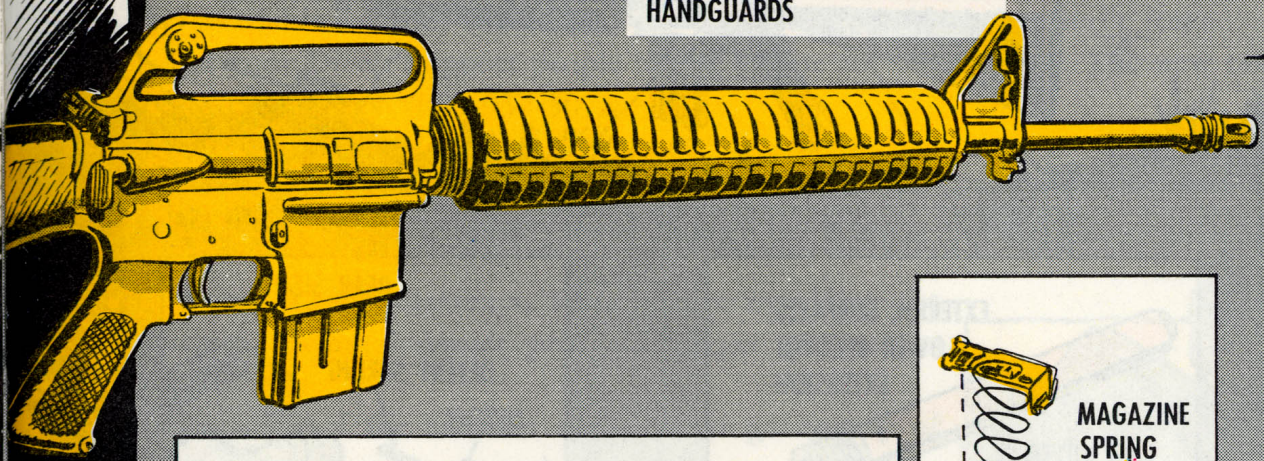
GO RIGHT THRU THE SUPPRESSOR

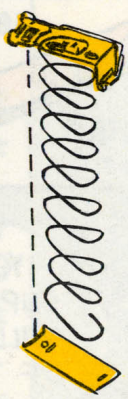
CHAMBER



BE SURE YOU COAT LOCKING LUGS

ALL EXTERIOR METAL SURFACES INCLUDING THOSE UNDER THE HANDGUARDS

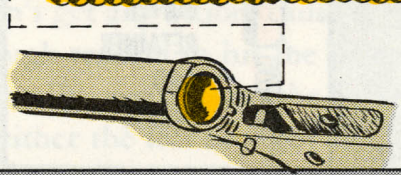




MAGAZINE SPRING

ACTION SPRING GUIDE

ACTION SPRING

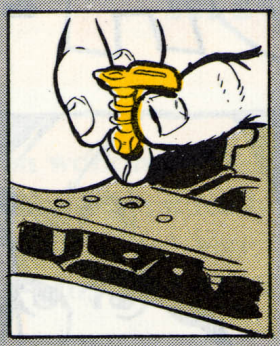


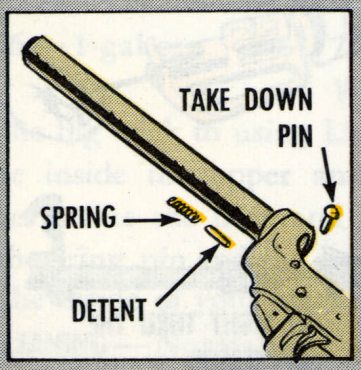
INSIDE LOWER RECEIVER EXTENSION

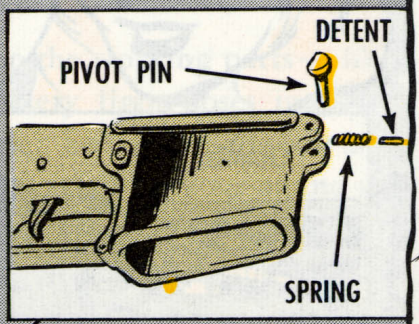
YOUR ARMORER WILL LUBE THESE PARTS GENEROUSLY WITH LSA!

YOUR ARMORER'S AREAS

SELECTOR LEVER DETENT AND SPRING

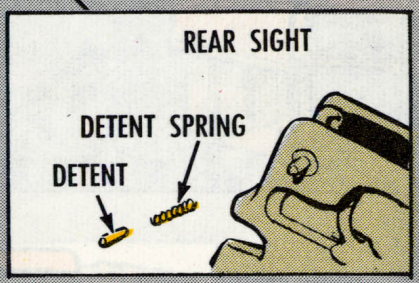






DIRECT SUPPORT AREAS

LUBE GENEROUSLY WITH LSA!



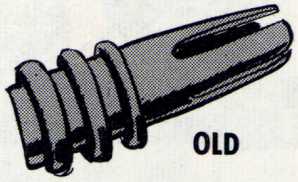
YOUR DIRECT SUPPORT GUYS WILL TAKE CARE OF THESE PARTS!

LUBE LIGHTLY!
BUFFER
RETAINER
AND
SPRING

FLASH ON THE FLASH

Don't get impatient if you see another guy with a new closed-type flash suppressor on his M16A1 rifle. Your turn will come.

The new suppressor, answering to FSN 1005-933-8089, was developed as a result of gripes that the old 3-prong open-type (FSN 1005-056-2248) catches on vines and bushes.



The closed-type suppressor's being produced for the latest M16A1's only and as spares for these new weapons. It'll be a while probably before there'll be enough around to replace the open-type suppressors on all weapons, which do just as good a job of flash suppressing.

NEW BUFFER AVAILABLE

Here's hot news: There's a new and better buffer (action spring guide assembly) available for your M16A1 . . . no fiber washers and no hydraulic leaks.

Get your Direct Support people to install one for you soonest. The new one comes under FSN 1005-937-3078.

It'll replace the old one . . . FSN 1005-992-6658.

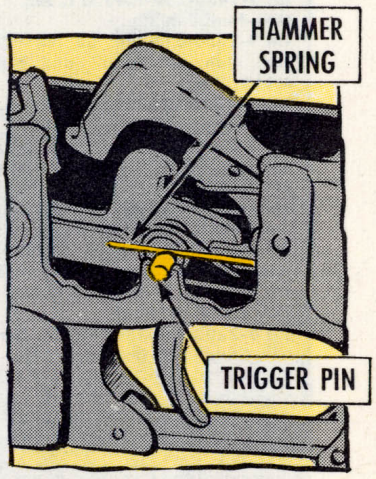
SPRING GOES ON TOP

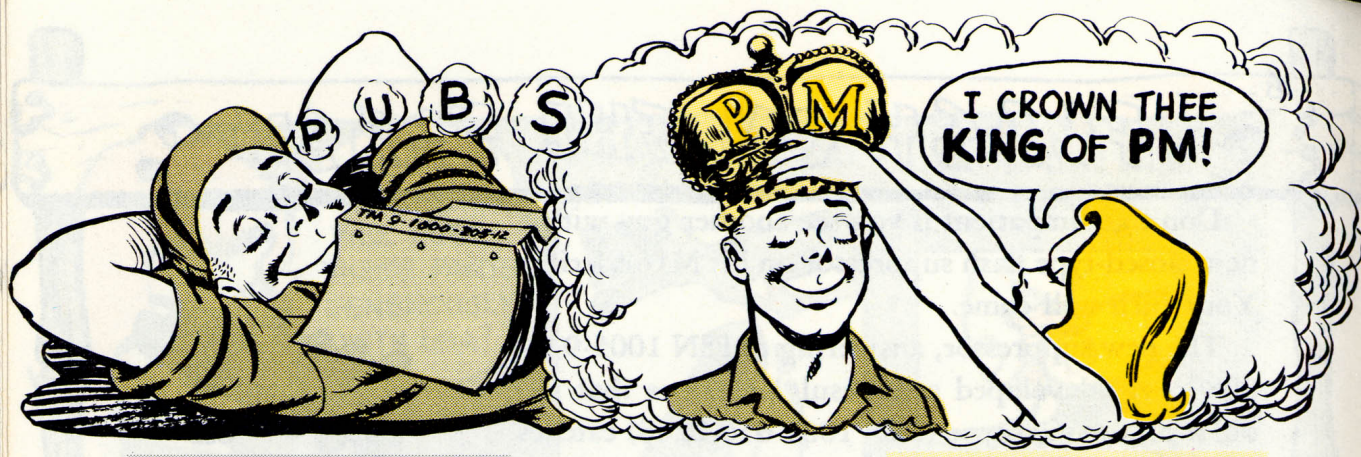
Watch it, you armorers, when you're installing the hammer spring, hammer pin and trigger pin on an M16A1 rifle.

The ends of the hammer spring must go on **top** of the trigger pin, with one end of the spring resting in the groove of the pin.

If you goof up and get the fingers of the hammer spring under the trigger pin, the poor Joe who goes to fire it won't get any action 'cause the hammer then won't have enough tension to hit the firing pin.

Incidentally, you can put the hammer and trigger pins in from either the left or right side of the receiver, mox nix.





A selected list of recent publications of interest to Organizational Maintenance Personnel. This is a list compiled from recent Adjutant General's Distribution Center Bulletins. For complete details see DA Pam 310-4 and Ch 5 (Feb 67) and DA Pam 310-6 and Ch 3 (Apr 67).

TECHNICAL MANUALS

TM 3-1040-251-15, Jun, Test Set, Flame Thrower-Riot Control Agent Disperser Hydrostatic-And-Volumetric, 6,000 PSI, M5.
TM 5-337, C1, Jul, Paving And Surfacing Operations.
TM 5-3431-201-25P, Jun, Welding Machine, ARC: Gen; Diesel Driven Single Operator; Remote Control; 300 AMP DC ARC; Skid Mtd; 60 AMP 20 V Min, 375 AMP At 40 V Max, Current 115 V, 3 KW Aux Power (Libby Mod ODW-300).
TM 5-3800-201-ESC, May, Grader, DED, Caterpillar 12, 212, Letourneau Westinghouse 220, Adams 550, Galion 116, 118, Huber Warco 4D, Rome 402, Ridell Mod Warco 4D-100.
TM 5-6115-405-15, Jul, Gen Set, Gas Eng: 0.125KW, AC, 115V, Single Phase, 400 Cycle; Special Purpose; Portable; W/Carrying Case (Homelite Mod XLA 115/1/400-1P).
TM 9-1400-426-12, C1, Aug, Redeye.
TM 9-1400-500-12/2, Jul, Hawk.
TM 9-1330-202-25, Jul, AH-1G-Helicopter.
TM 9-1410-302-12P/1, Jul, Sergeant.
TM 9-1410-375-12P/1, Jul. Pershing.
TM 9-1430-377-15P/2, Jul. Pershing.
TM 9-1450-250-15P/3/1, Jul, Nike-Herc.
TM 9-2300-216-20P, C3 (Corr Copy), Jun, Gun, SP, M107 and Howitzer M110.
TM 9-2300-224-ESC/2, C1, Jun, Carrier, Mortar 107-MM, SP M106.
TM 9-2300-224-ESC/6, C1, Jun, Carrier, Personnel, Full Tracked Armored, M113A1.
TM 9-2300-224-ESC/7, C1, Jun, Carrier, Mortar, SP, M106A1.
TM 9-2300-224-ESC/8, C1, Jun, Carrier, Cmd Post: Light Tracked M577A1.
TM 9-2300-224-ESC/9, C1, Jun, Flame Thrower SP M132A1.
TM 9-2300-224-ESC/11, C1, Jun, Carrier, Cargo, Full-Tracked, M548.
TM 9-2320-209-10, C3, Jun, 2½ Ton Trucks M34, M35, M35A1, M35A2, M36, M44, M45, M47, M48, M49, M49C, M50, M58, M59, M60, M109, M109A1, M109C, M109D, M185, M275, M292/M292A1, XM 567, V17A/MTQ, V18A/MTQ.
TM 9-2320-222-ESC, C1, Jul, Recovery Vehicle, Full Tracked: Med M88.
TM 9-4935-253-15P/1/1, Jun, Nike-Herc.
TM 9-4935-306-15P/2/1, Jun, Sergeant.
TM 9-6920-310-12P, Jul, Sergeant.
TM 9-8140-375-12P/1, Jul, Pershing.
TM 10-281, May Field Bakery Operations.
TM 10-500-18, May, Airdrop: Rigging ¼-Ton Cargo Trailers, M416 and M100.
TM 10-500-30, Jun, Rigging of Road Scrapers.
TM 11-5805-413-12, Jun, Multiplexer Set AN/TCC-70.
TM 11-5820-284-15, Jun, Radio Receiving Set AN/GRR-5.
TM 11-5820-538-12, Jun, Mast AB-577/GRC And Ext Kit, Mast MK-806/GRC.
TM 11-5820-667-12, Jun, Radio Set AN/PRC-77.
TM 11-5820-699-15, May Baseband Squelch Unit Rel Type 1056.
TM 11-5825-246-15, May, Radio Beacon Set AN/TRN-24.
TM 11-5835-230-20P, Jul, Recorder-Reproducer, Sound RD-242/G.
TM 11-6110-241-15, Jun, Regulator, Voltage CN-1214/G.
TM 11-6110-242-15, Jun, Regulator, Voltage CN-1146/FRC-93.
TM 11-6130-250-15, Jun, Charger, Battery PP-4127/U.
TM 11-6230-219-12, Jul, 2.2-KW, 23-Inch Xenon Search Light.
TM 11-6625-230-25P, Jul, Meter, Audio Level ME-71 ( ) /FCC.
TM 11-6625-289-15, Jul. Test Sets, Battery AN/USM-63 And AN/USM-63 And AN/USM-63A.
TM 11-6625-438-15, Jul, Voltmeter, Electronic AN/USM-98.
TM 11-6625-917-15, Jul, Radar Test Set AN/UPM-29A, AN/UPM-29B, AN/UPM-29C.
TM 11-6625-935-12, Jul, Audio Oscillators TS-312/FSM-1, TS-312A/FSM-1, And TS-382/U, And Sig Gen TS-312B/FSM-1.
TM 11-6625-1536-15, May, VHF Sig Gen, Hewlett-Packard Mod 608E.
TM 11-6660-255-12, Jun, Wind Measuring Sets AN/PMQ-6 And AN/PMQ-6A.
TM 11-6665-230-15, Jun, Radiac Set AN/PDP-27R.
TM 11-6730-229-12, Jul, Motion Picture, Sound, 16MM.
TM 11-6760-228-12, Jun, Flasher System, Photographic Aircraft LS-59.
TM 11-6760-232-15, Jun, Test Set, Photo Flasher System, Bench LS-69.
TM 11-6780-220-12, Jun, Test Set, Photo Flasher System, Flight Line LS-70.
TM 55-405-3, C4, Jun, All Fixed And Rotor Wing.
TM 55-405-3, C6, Jul, All Fixed And Rotor Wing.
TM 55-405-7, C2, Jul, All Fixed And Rotor Wing.
TM 55-1510-201-20P, C2, Aug, U-8.
TM 55-1510-203-20PMP, Jul, U-6.

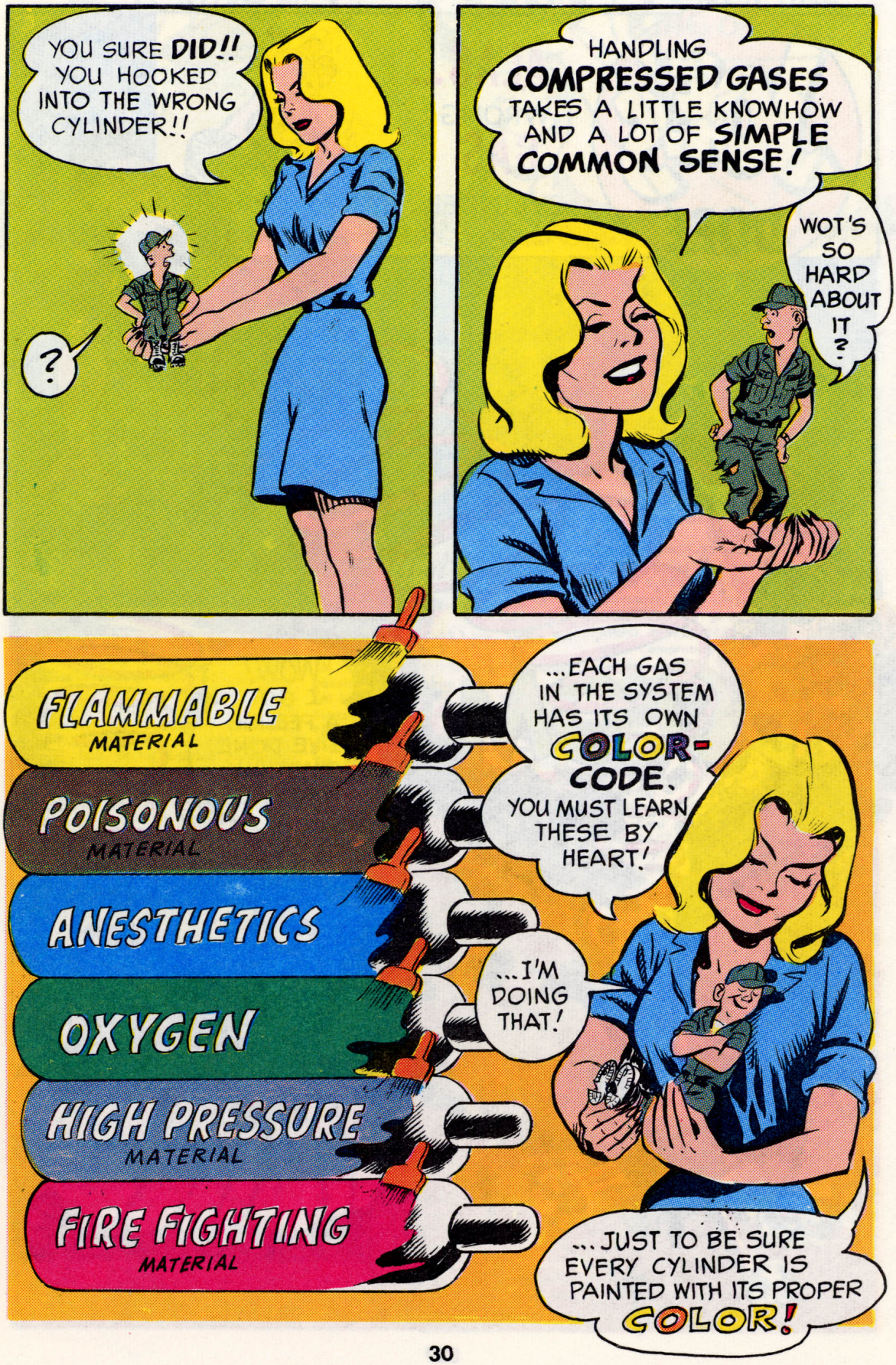
MODIFICATION WORK ORDERS

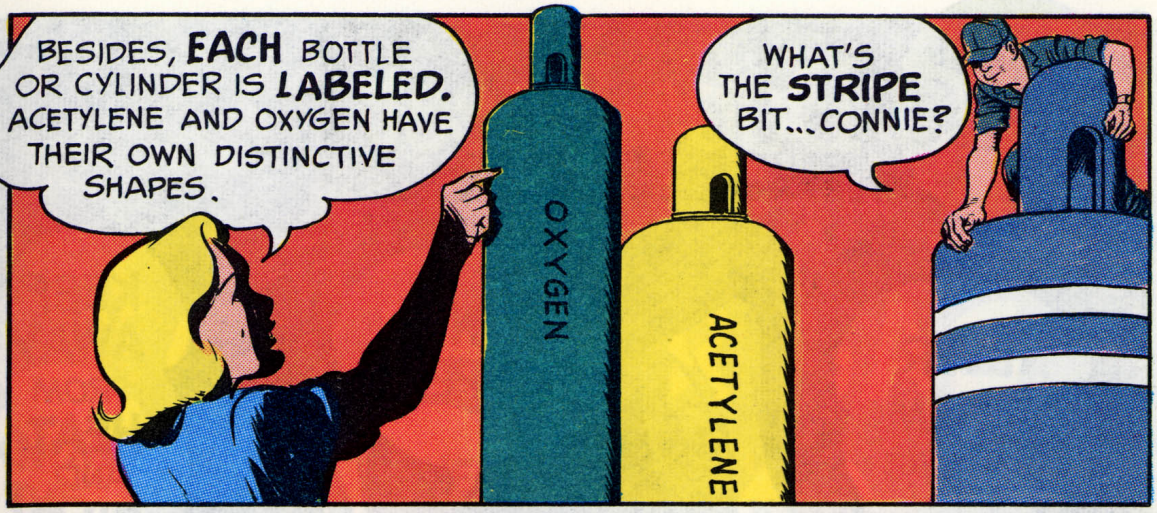
MWO 5-4310-225-50/1, Aug, Compressor Air Schramm Mod MWE-60 (URGENT).
MWO 5-3805-231-30/1, Jul, Scraper, Towed, Euclid Mod 585 N-G.
MWO 5-3805-254-30/1, Jul, Motor, Outboard, 25hp Chrysler Mod G35691.
MWO 8-8120-200-20/1, Jul, Cylinder, Compressed Gas, USP Nitrous Oxide, Size M, 2000 Gal, Empty: Modify Valve Outlet.
MWO 9-1240-293-40/2, Jul, Gun 175MM, M107 and Howitzer, 8-inch, M110.
MWO 9-1400-377-30/24, Aug, Pershing.
MWO 9-1450-375-30/32, Aug, Pershing.
MWO 9-2300-224-30/25, Aug, Carrier, Cmd Post, Light-Tracked, M577, and M577A1.
MWO 9-2320-224-30/6, -30/8, C1, Jul, Carrier, Cmd and Recon Armored, M114/M114A1.
MWO 9-2350-208-30/4, Jul, Tanks M48A2 and M48A2C.
MWO 9-2805-220-30/2, C2, Aug, Carrier, Cmd And Recon: Armored M114/M114A1.
MWO 55-1930-203-30/2, May, Lighter, Amph, LARC LX.
MWO 55-1930-203-50/1, Aug, Lighter, Amph, LARC LX.

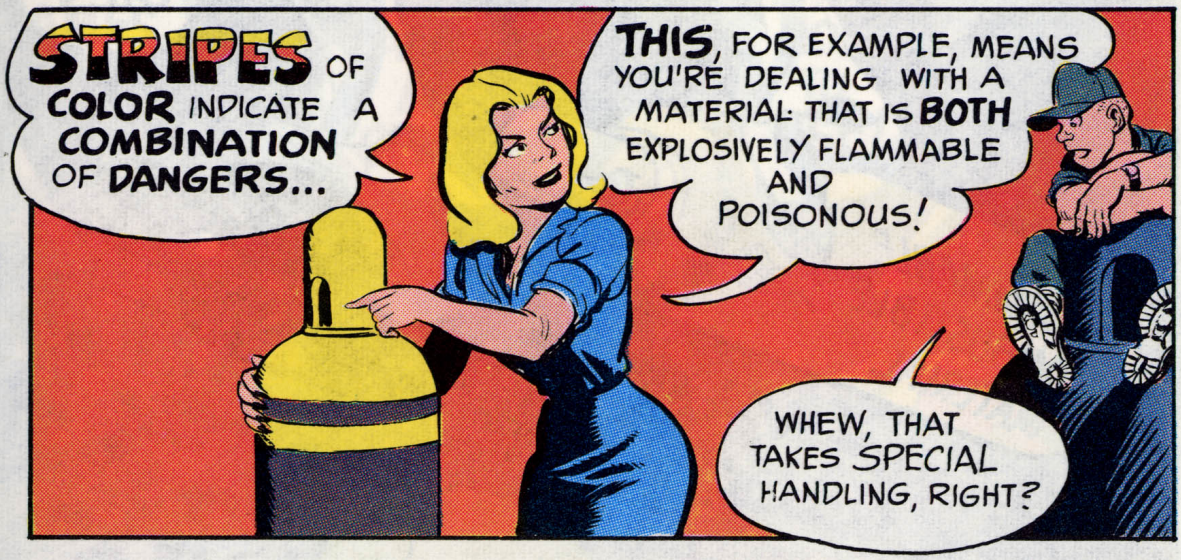
TECHNICAL BULLETINS

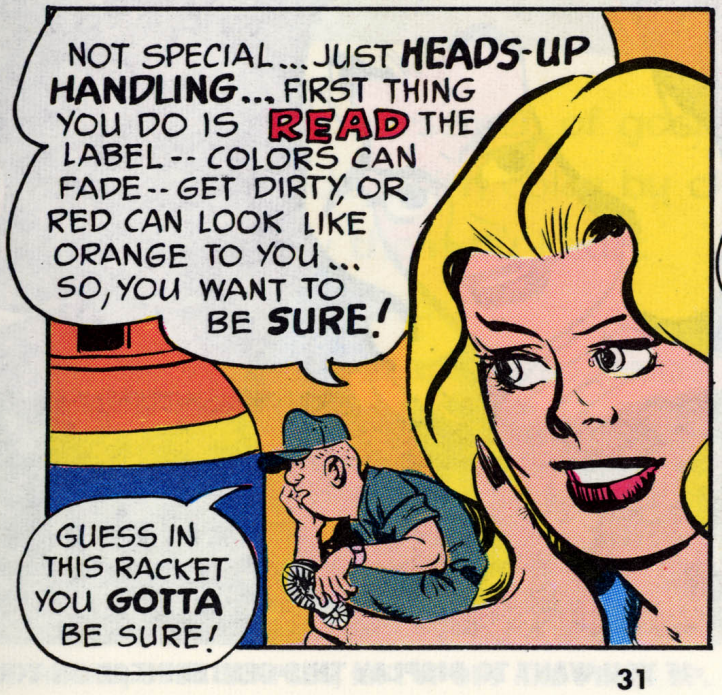
TB 5-337-1, May, Central Mix Plant And Slip-Form Paver.
TB 11-5895-514-15/1, Aug, Calibration And Maintenance Calibration Requirements For U.S. Army Electronics Cmd Test And Measuring Equip Of The Integrated Wide Band Commo System.
TB 34-9-261, Aug, Marking Of Contaminated Or Dangerous Land Areas.
TB 55-1500-206-20/6, Aug, UH-1A-1B-1C-1D, AH-1G.
TB 55-1500-308-25, Aug, All Fixed And Rotor Wing.
TB 55-1510-202-20/4, C1, Aug, O-1.

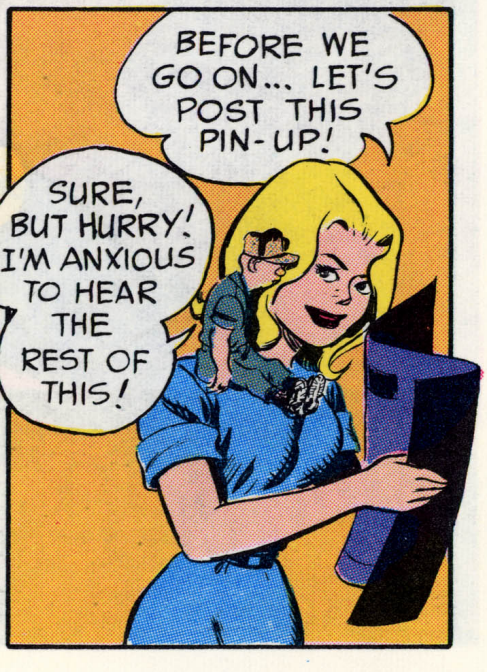
JOE'S DOPE
ALAS...
WRONG
GAS
CYLINDER
BOOOM
WOW! I GOT A FEELING I'VE DONE SOMETHING WRONG!


YOU SURE DID!! YOU HOOKED INTO THE WRONG CYLINDER!!
?
HANDLING COMPRESSED GASES TAKES A LITTLE KNOWHOW AND A LOT OF SIMPLE COMMON SENSE!
WOT'S SO HARD ABOUT IT?
FLAMMABLE MATERIAL
POISONOUS MATERIAL
ANESTHETICS
OXYGEN
HIGH PRESSURE MATERIAL
FIRE FIGHTING MATERIAL
...EACH GAS IN THE SYSTEM HAS ITS OWN COLOR-CODE. YOU MUST LEARN THESE BY HEART!
...I'M DOING THAT!
...JUST TO BE SURE EVERY CYLINDER IS PAINTED WITH ITS PROPER COLOR!


BESIDES, EACH BOTTLE OR CYLINDER IS LABELED. ACETYLENE AND OXYGEN HAVE THEIR OWN DISTINCTIVE SHAPES.
OXYGEN
ACETYLENE
WHAT'S THE STRIPE BIT... CONNIE?

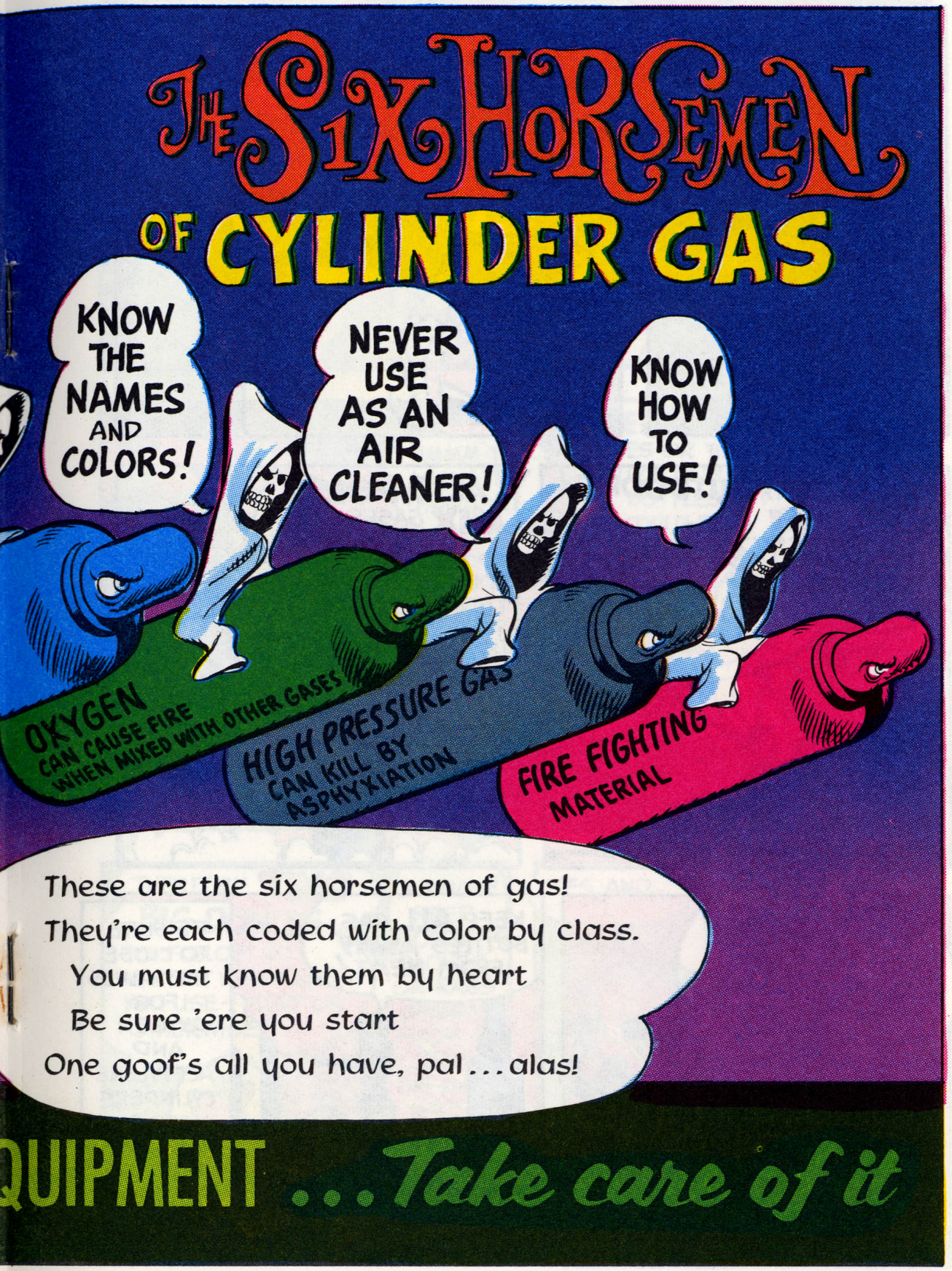

STRIPES OF COLOR INDICATE A COMBINATION OF DANGERS...
THIS, FOR EXAMPLE, MEANS YOU'RE DEALING WITH A MATERIAL THAT IS BOTH EXPLOSIVELY FLAMMABLE AND POISONOUS!
WHEW, THAT TAKES SPECIAL HANDLING, RIGHT?


NOT SPECIAL... JUST HEADS-UP HANDLING... FIRST THING YOU DO IS READ THE LABEL -- COLORS CAN FADE -- GET DIRTY, OR RED CAN LOOK LIKE ORANGE TO YOU... SO, YOU WANT TO BE SURE!
GUESS IN THIS RACKET YOU GOTTA BE SURE!


BEFORE WE GO ON... LET'S POST THIS PIN-UP!
SURE, BUT HURRY! I'M ANXIOUS TO HEAR THE REST OF THIS!

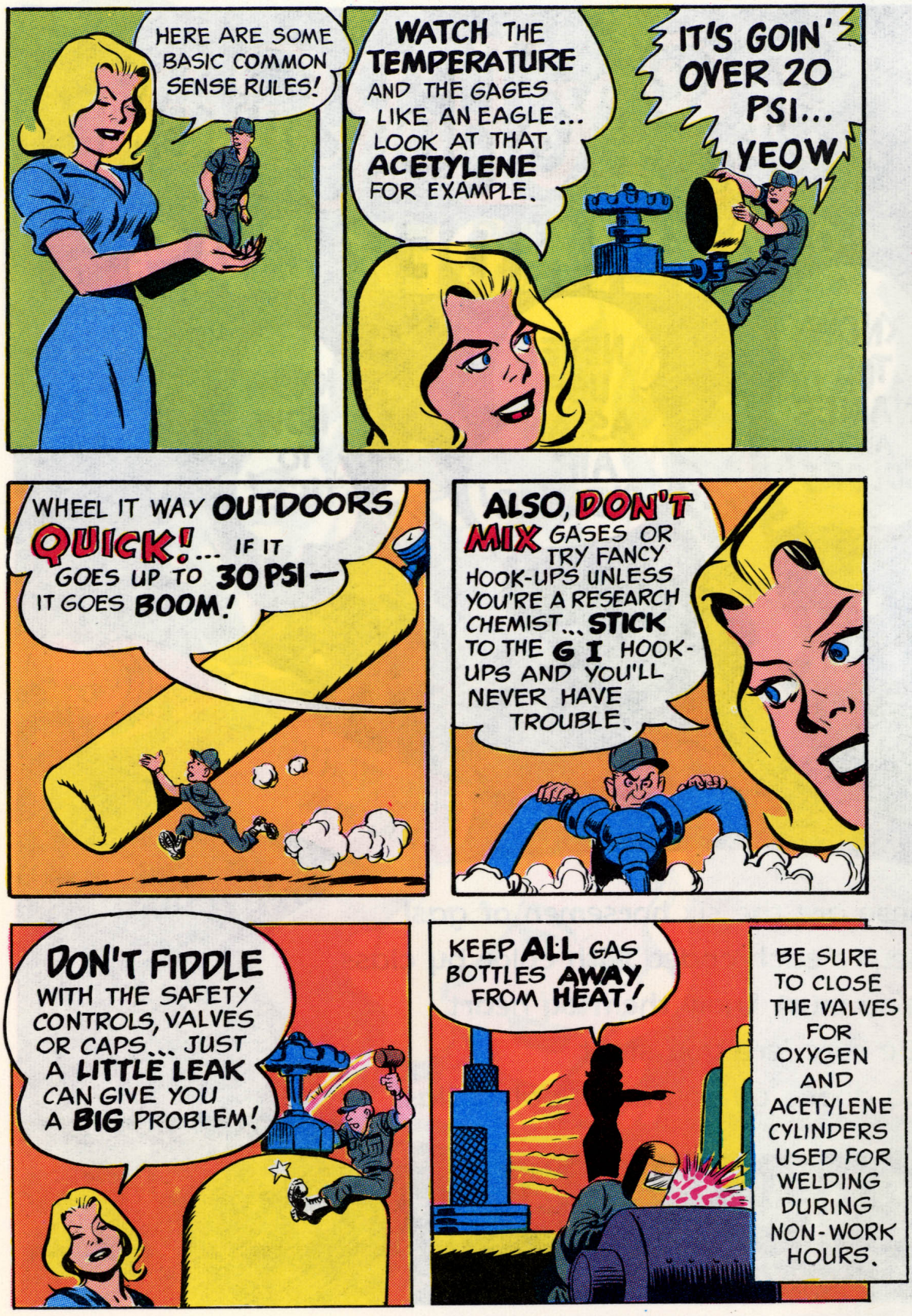
IF YOU WANT TO DISPLAY THIS CENTERPIECE ON YOUR BU

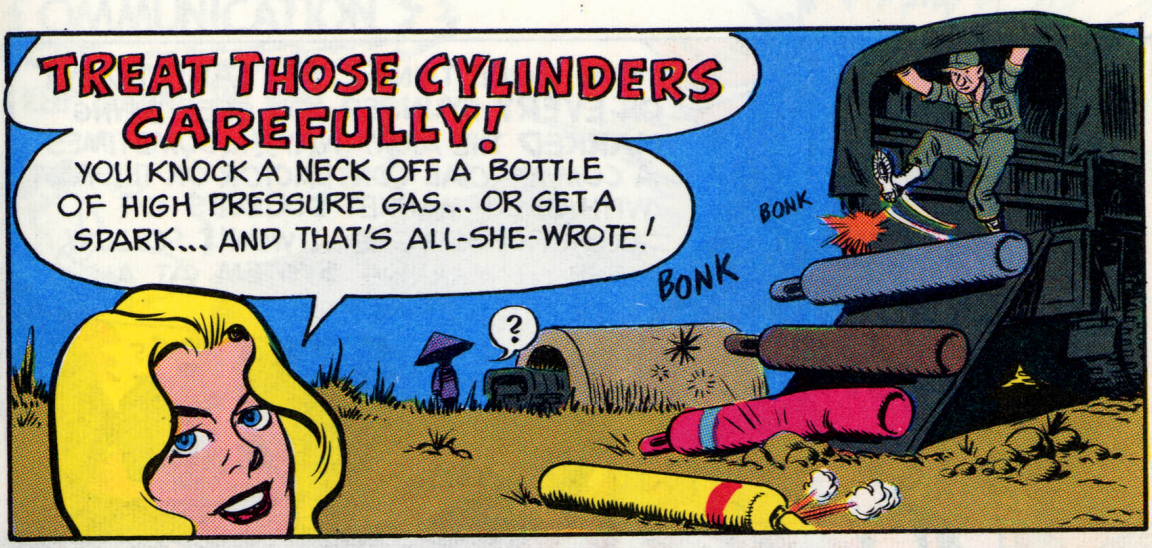
IF YOU WANT TO DISPLAY THIS CENTERPIECE ON YOUR BULLETIN BOARD, OPEN STAPLES, LIFT IT OUT AND PIN IT UP.

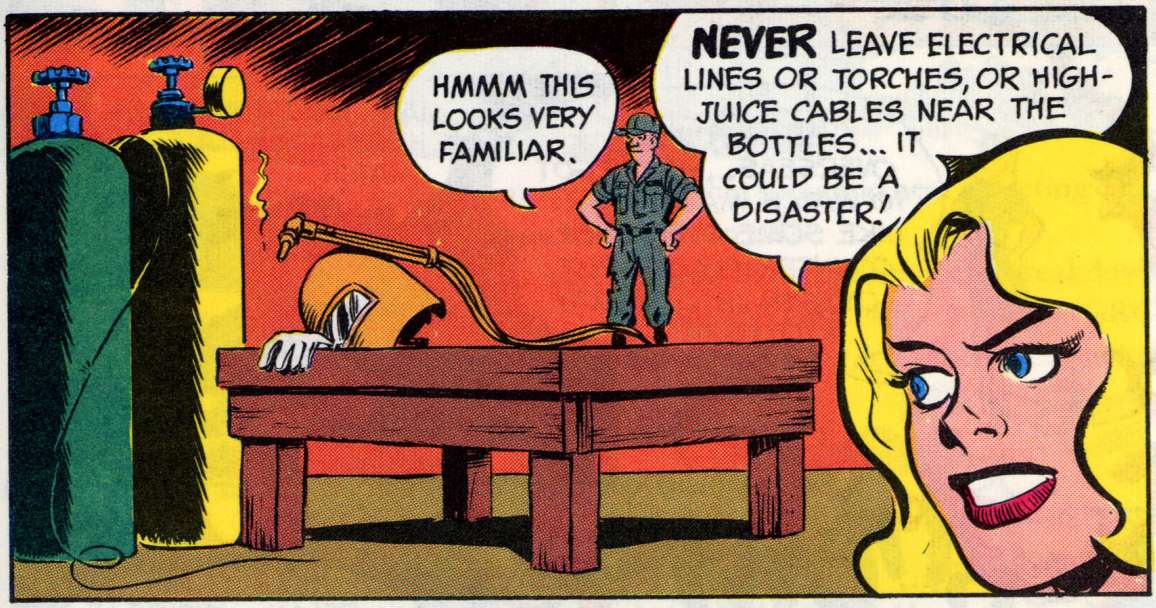


QUIPMENT ... Take care of it

ULLETIN BOARD, OPEN STAPLES, LIFT IT OUT AND PIN IT UP.


HERE ARE SOME BASIC COMMON SENSE RULES!
WATCH THE TEMPERATURE AND THE GAGES LIKE AN EAGLE... LOOK AT THAT ACETYLENE FOR EXAMPLE.
IT'S GOIN' OVER 20 PSI... YEOW
WHEEL IT WAY OUTDOORS QUICK!... IF IT GOES UP TO 30 PSI— IT GOES BOOM!
ALSO, DON'T MIX GASES OR TRY FANCY HOOK-UPS UNLESS YOU'RE A RESEARCH CHEMIST... STICK TO THE G I HOOK-UPS AND YOU'LL NEVER HAVE TROUBLE.
DON'T FIDDLE WITH THE SAFETY CONTROLS, VALVES OR CAPS... JUST A LITTLE LEAK CAN GIVE YOU A BIG PROBLEM!
KEEP ALL GAS BOTTLES AWAY FROM HEAT!
BE SURE TO CLOSE THE VALVES FOR OXYGEN AND ACETYLENE CYLINDERS USED FOR WELDING DURING NON-WORK HOURS.


TREAT THOSE CYLINDERS CAREFULLY!
YOU KNOCK A NECK OFF A BOTTLE OF HIGH PRESSURE GAS... OR GET A SPARK... AND THAT'S ALL-SHE-WROTE!
BONK
BONK
?


HMMM THIS LOOKS VERY FAMILIAR.
NEVER LEAVE ELECTRICAL LINES OR TORCHES, OR HIGH-JUICE CABLES NEAR THE BOTTLES... IT COULD BE A DISASTER!

THERE'RE TWO BIG DON'TS TO FOLLOW NO MATTER WHICH GAS YOU USE—INERT OR OTHERWISE!
I KNOW! KEEP OILY GLOVES OR RAGS AWAY FROM A LEAK... THE RIGHT MIX'LL BLOW UP!!

YES, AND...
NEVER USE HIGH-PRESSURE GAS FOR CLEANING IN PLACE OF COMPRESSED AIR!
OOF!

ONE MORE THING... YOU CAN'T COUNT ON EVERY CYLINDER YOU SEE BEING MARKED THE ARMY WAY!!... SOMETIMES A COMMERCIAL CONTRACTOR ON THE POST WITH OPEN-MARKET SOURCES OF COMPRESSED GAS... WON'T FOLLOW THE GI MARKING SYSTEM AT ALL ON HIS CYLINDERS!
SS
EVEN IF YOU'RE OVERSEAS... YOU'VE GOT TO WATCH MARKINGS... LIKE SOME OVER-THE-COUNTER PLACES PUT OXYGEN INTO YELLOW BOTTLES!
MAN IT'S DARK DOWN HERE... AHH A MATCH...
SSS
BUUM
HEY...OOH WHA...ULP. HEY, WHERE'S CONNIE! I WAS TALKIN' TO HER!
RELAX... WE'RE TAKING YOU TO CONNIE FOR A QUICK LECTURE ON HOW TO HANDLE GAS CYLINDERS -- BEFORE THE CHOPPER EVACS YOU!

COMMUNICATION

KEEP BEATING THE HEAT

Hey, sheltered friend, losing your cool 'cause that solar and heat reflecting camouflage paint has been knocked, scratched or worn off?

Like, f'rinstance, you're getting a heat buildup that's causing heat breakdown of fuses, capacitors . . . and operators . . . in the AN/GRC-46( ) or AN/GRC-26( ) radio set or AN/MRC-69( ) radio terminal set, or other etc., shelter equipment.

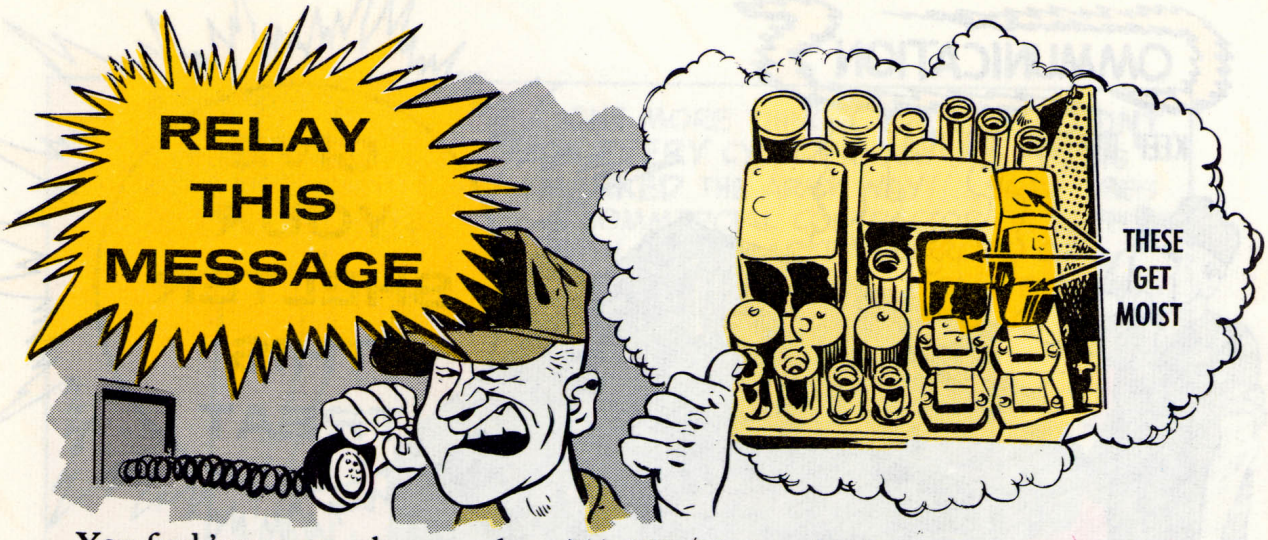
Don't sweat it. Spot or touchup paint it with the infrared penetrating OD to keep the temp toppled.

The solar heat paint, Mil Spec E-46061 (MO), is a GSA-5 item. FSN 8010-905-7133 will get a qt and FSN 8010-985-7258, a gal.

Be sure the area you're painting is clean and has the white undercoating before putting on the solar heat paint. FSN 8010-878-5761 is for a qt of lusterless white and FSN 8010-297-2111 is for a gal. The stock numbers are listed in DOD Catalog C8000-IL-A (Jan 66).

Remember, never use regular OD for touching up your cool coated shelter or it'll be back to its old hotbox self.

O'course, if a major paint job's needed, call support.

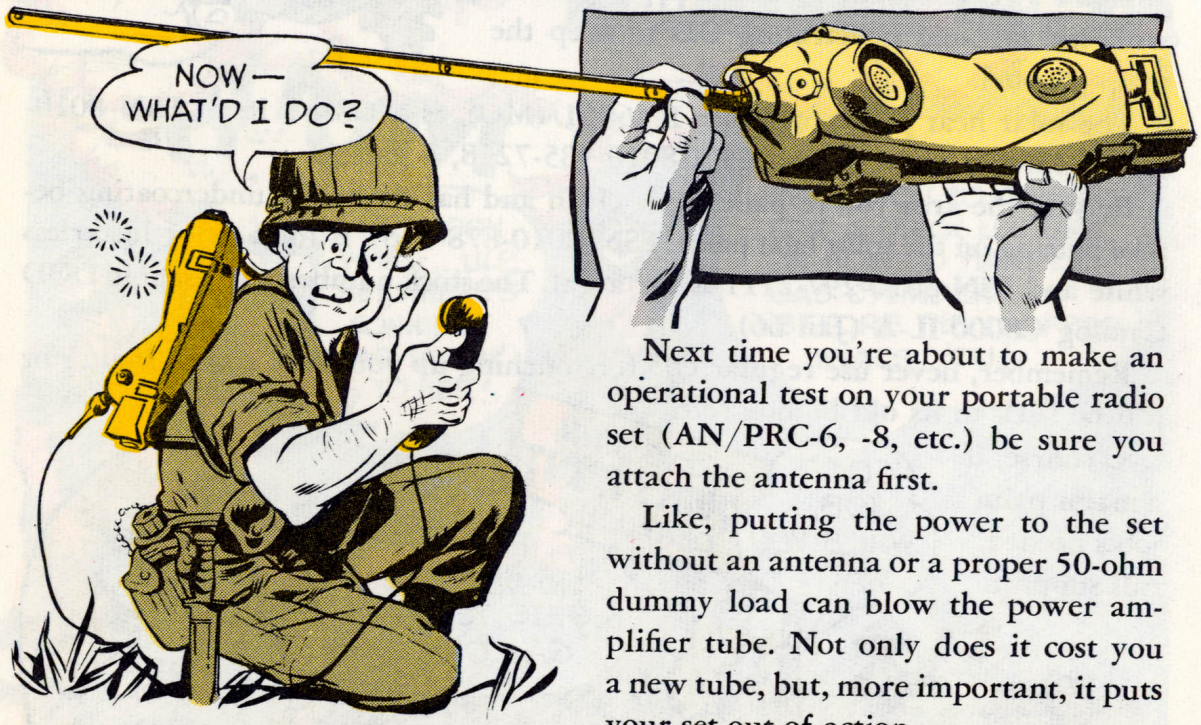


You find 'em everywhere — those TA-182/U signal telegraph-telephone converters. If you have the equipment, you know that the AN/MRC-69 and AN/MRC-73 radio terminal sets are two of the places.

And if you want to keep the converters out of your support unit's hands a little longer, fire up the equipment at least three times a week for an hour at a clip. The idea is to warm away any condensation that might collect inside the three relays for each converter. Moisture can make the relays stick . . . and that means a DSU repair job.

While you're at it, you might give the same "heat treatment" to your spare converters.

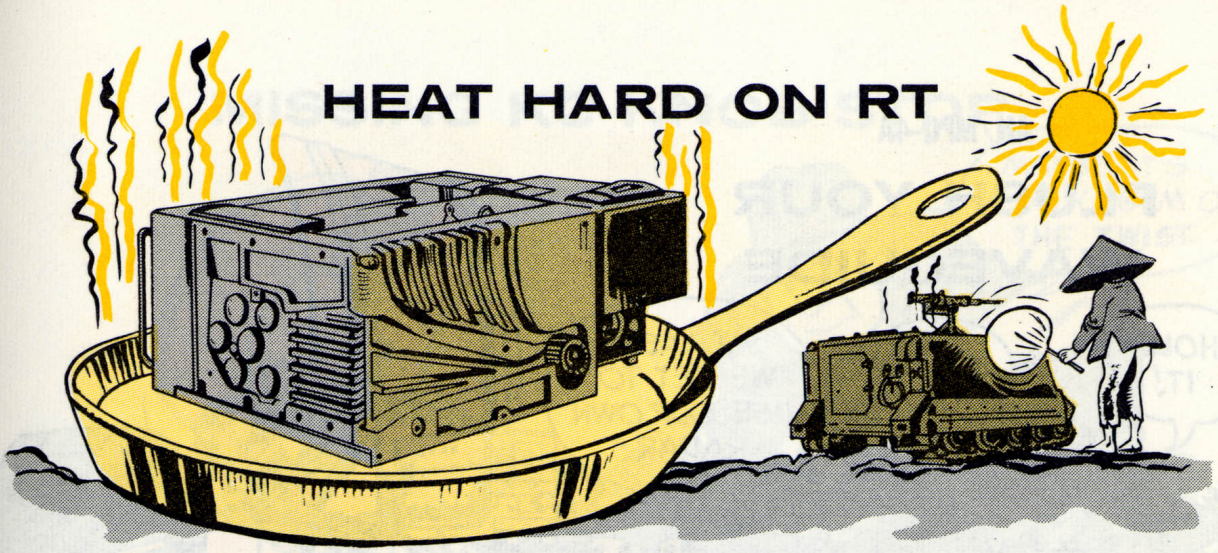
TESTING? USE YOUR ANTENNA



Next time you're about to make an operational test on your portable radio set (AN/PRC-6, -8, etc.) be sure you attach the antenna first.

Like, putting the power to the set without an antenna or a proper 50-ohm dummy load can blow the power amplifier tube. Not only does it cost you a new tube, but, more important, it puts your set out of action.

HEAT HARD ON RT



There's enough heat in torrid territory hanging around your tracked vehicle's AN/VRC-12 series radio set without heaping on more.

Take f'rinstance, the RT-246 or RT-524 receiver-transmitter. . . .

You have to keep the blower intake and exhaust ports free of packs, clothing or other equipment or the radio will choke up, overheat and conk out on you. It's even better if you keep that gear off the set completely.

While you're in the remembering mood, clean the blower motor vanes and heat exchangers to help hold the heat down. Dust and dirt can gang up on that RT quicker'n a water buffalo can wink.

Para 21 in TM 11-5820-401-20 (Dec 61) fills you in on cleaning the vanes and heat exchangers.

FOR A1 SHAPE—TAPE

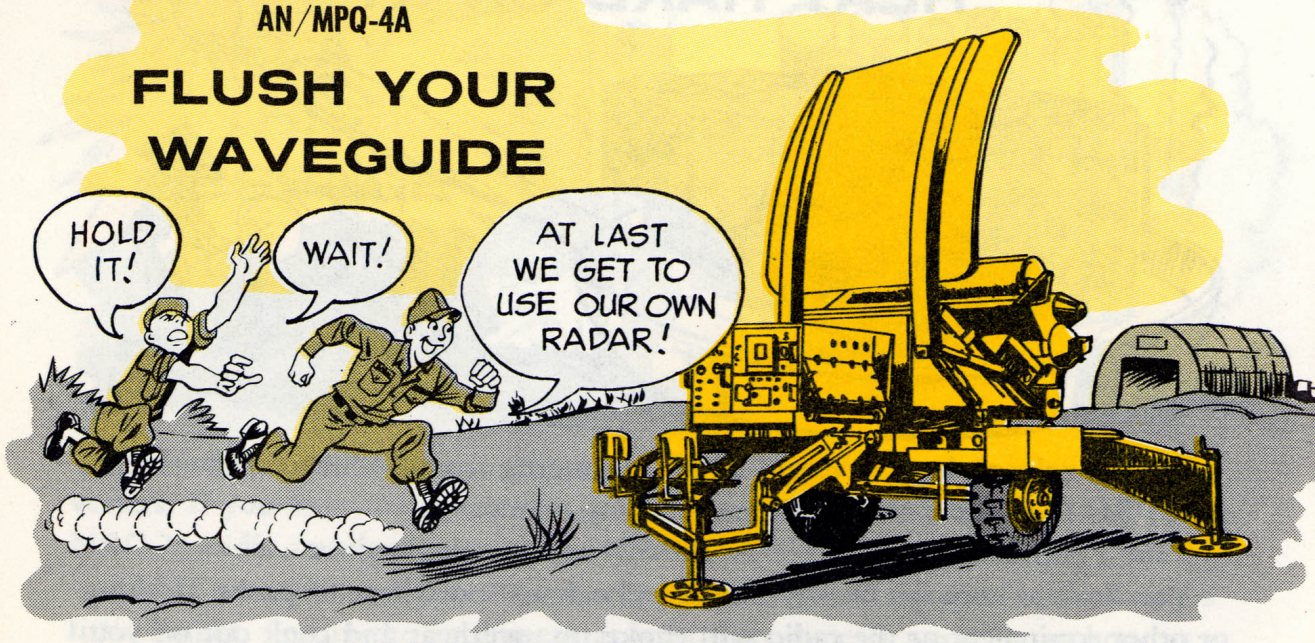
Good connections can take you — and your voice — a long way.

And one thing that'll help when it comes to your AN/VRC-12 series radio sets is to make sure the antenna base connector is clean . . . minus corrosion.

When the antenna's off, the connector takes a beating from the weather, salt air and what-have-you. So keep it covered with tape — but keep the adhesive away from the connector. If it sticks to the connector, you've got an unwanted insulator.

AN/MPQ-4A

FLUSH YOUR WAVEGUIDE



Keep that flippin' finger from turning on magnetron switches to your AN/MPQ-4A radar set, especially if it has been lazying around for awhile.

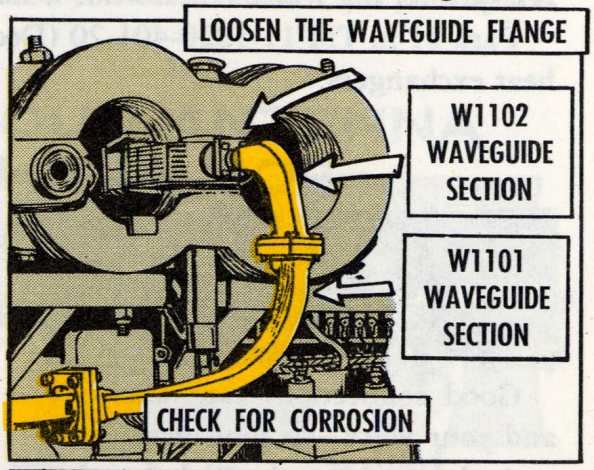
'Cause there're a couple or three "pre-operation" things you have to do to block moisture and corrosion from getting the upper hand and knocking out the set.

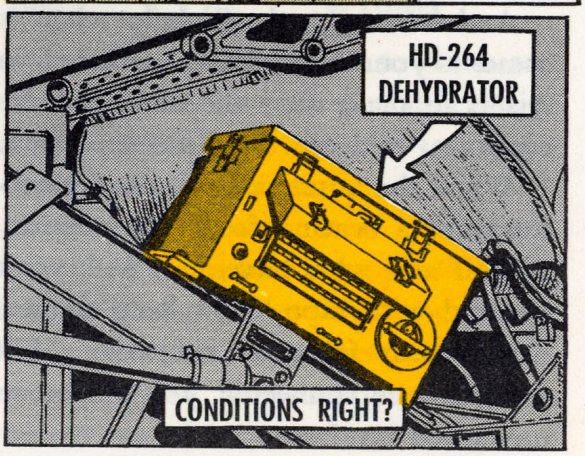
Take, f'rinstance, the waveguide to the magnetron in the OA-1257 receiver-transmitter control group.

Loosen the waveguide flange connected to the maggie, without finger-touching the window, and leave it loose for 10 to 15 minutes. This is so you can rid the waveguide of moisture that has ganged up on you.

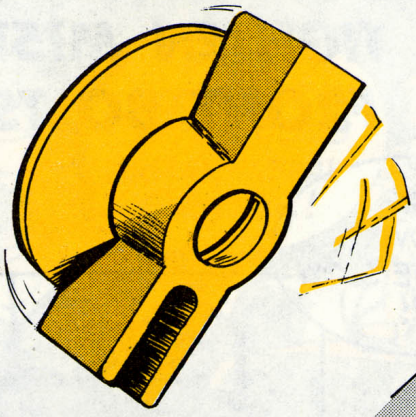
O'course, waveguide sections W1101 and W1102 should be taken apart to be eyeballed for clinging corrosion at least once a month . . . or more often if you're in an area where high humidity is hanging around.

One word of caution: Be sure the condition, indications and corrective measure for the HD-264 dehydrator are right, like it says in Para 81, Item 9, TM 11-5840-208-10, before you operate the transmitter.





MISSING KC KNOB STOP



Dear Half-Mast,

On one of our new RT-524 receiver-transmitters the KC knob turns all the way around and doesn't stop at the end of the scale. Our support says don't sweat it 'cause some of the new models do this.

I haven't seen anything on this in tech manuals. Does this affect the RT?

SP5 W. C. S.

Dear Specialist W. C. S.,

No. Certain models don't have a stop on the KC knob. The only thing this minor manufacture change might do is speed up frequency shifting since you don't have to go through the entire freq range to get from one end of the scale to the other.

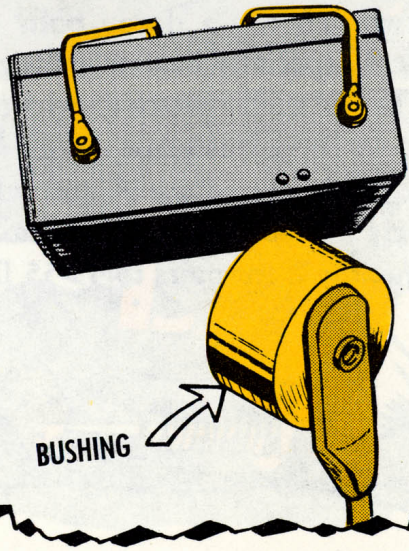
Half-Mast

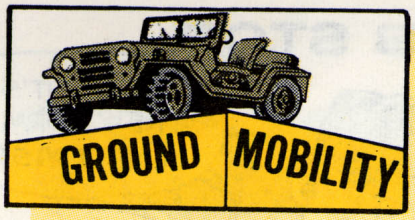
EXTRA ★★★★ The Maintenance Daily FINAL

BUSHING HOLDER GETS FSN

A bushing-less metal clasp or spring holder assembly for your AN/URM-105 multimeter is about as useful as a bald dome in a hair ad.

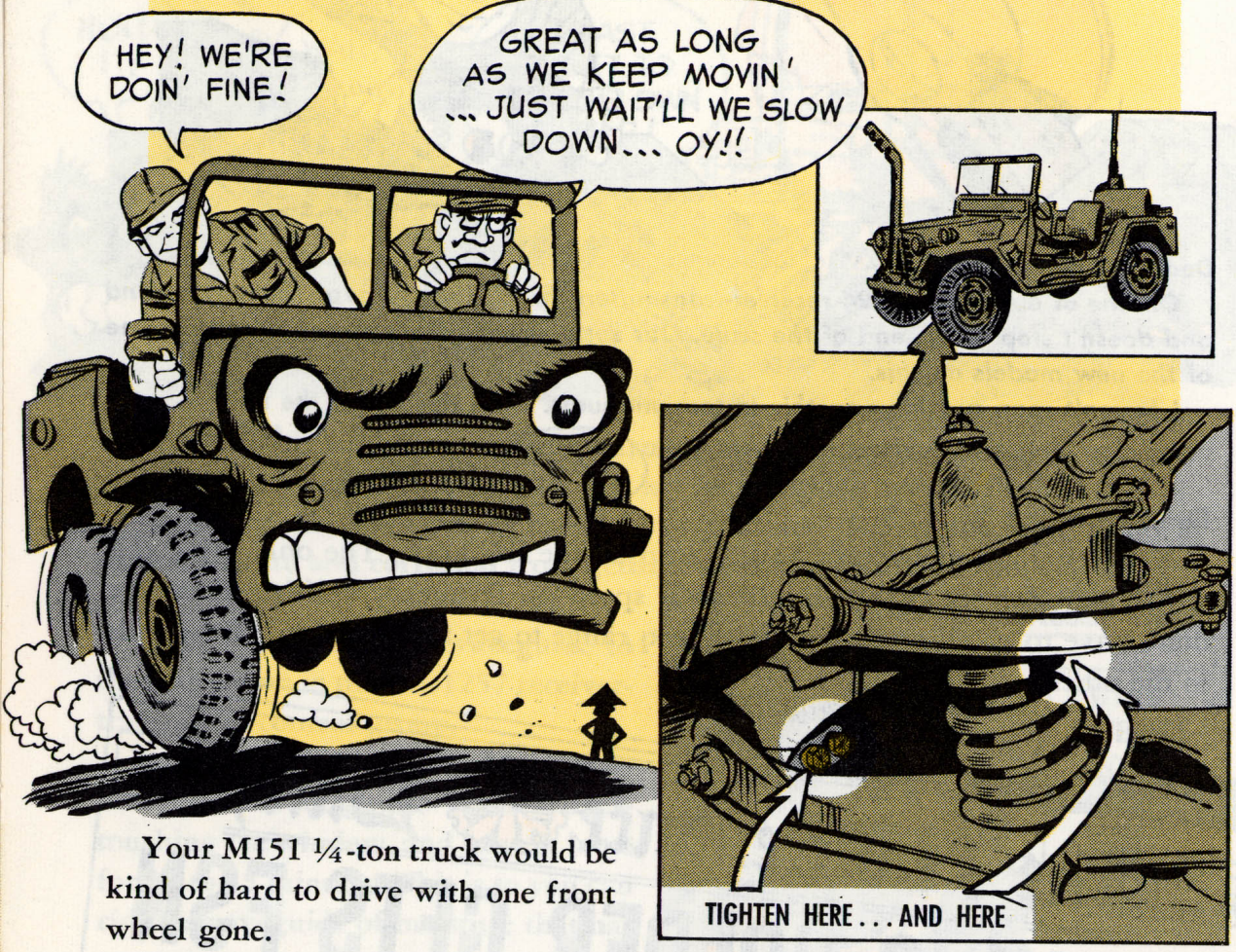
So-o-o-o, brush this assembly part problem aside with FSN 6625-947-9808, which includes the bushing. The assembly replaces the old bushing-less spring holder, FSN 6625-655-8045, in TM 11-6625-203-20P.





AVOID AWFUL JOLTS...

TIGHTEN M151 FRONT BOLTS

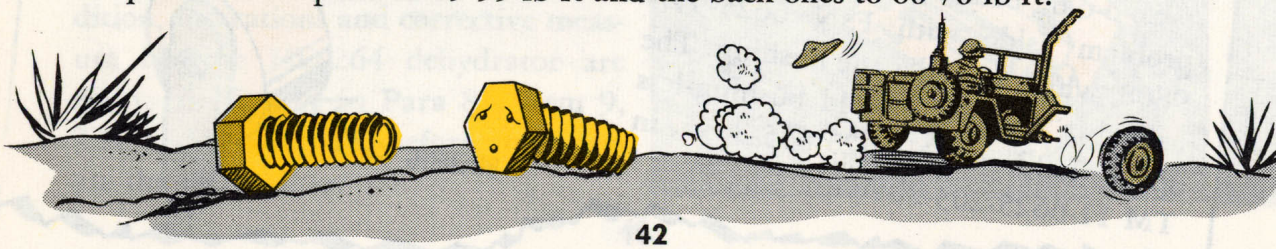


Your M151 ¼-ton truck would be kind of hard to drive with one front wheel gone.

That could happen if you don't check 3 important bolts on each side every week or two. There's a dozen bolts up front that could loosen and hurt you, but these 3, 'specially bear watching.

They're the 2 in front and 1 in rear on your lower front suspension arms that hold in the adjustment shims. They come loose, the shims drop out, and you may think you've got a bum wheel bearing.

Best not be taken in, but have your mechanic take up the slack instead. He'll torque the front pairs to 45-55 lb-ft and the back ones to 60-70 lb-ft.



M151 ¼-TON TRUCK . . . **GAS TANK STRAINER**

Hard up for a strainer in your M151 ¼-ton truck's gas tank? And there's none available in those washed-out M151's at your cannibalization point?

Well, if your bone yard's got any M38A1 ¼-ton trucks, you may be in luck. The fuel tank strainer in the M38A1 is just like the strainer in the M151.

M151 ¼-TON TRUCK . . .

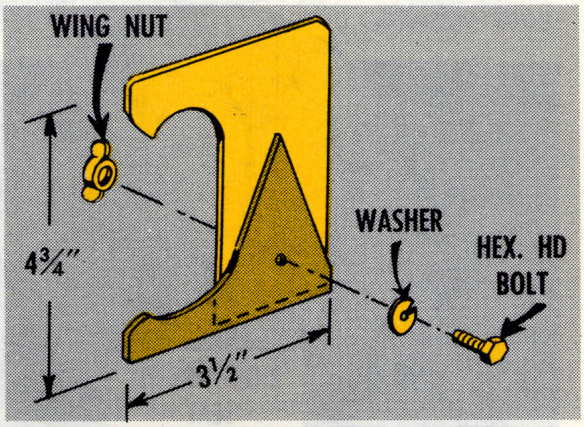
BALL-JOINT TOOL

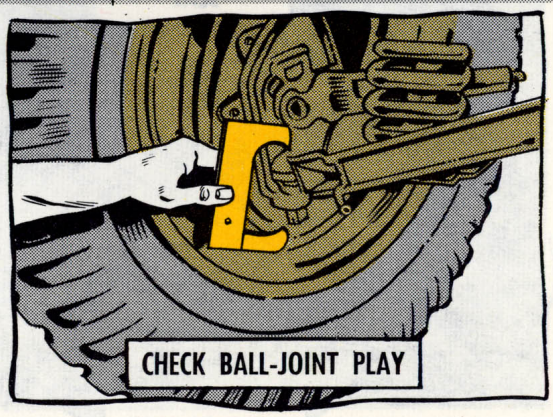
If you don't rate Tool Kit, Set B, for your G838-series ¼-ton trucks, then you don't have an outside caliper for checking ball-joint play.

But you can make a simple tool that'll do the job.

Cut the 2 parts out of a piece of sheet metal. Fasten 'em together with a ¼-in bolt, spring washer and wing nut. Snug the wing nut down enough so you have to work just a little to make the "jaws" move. Shape doesn't make any difference — just make sure the points are out far enough from the "handle" so it clears the ball-joint assembly.

Para 141 and Figure 134 in TM 9-2320-218-20 (Apr 63) show how you check for ball-joint play. The same info will go along with your homemade caliper.





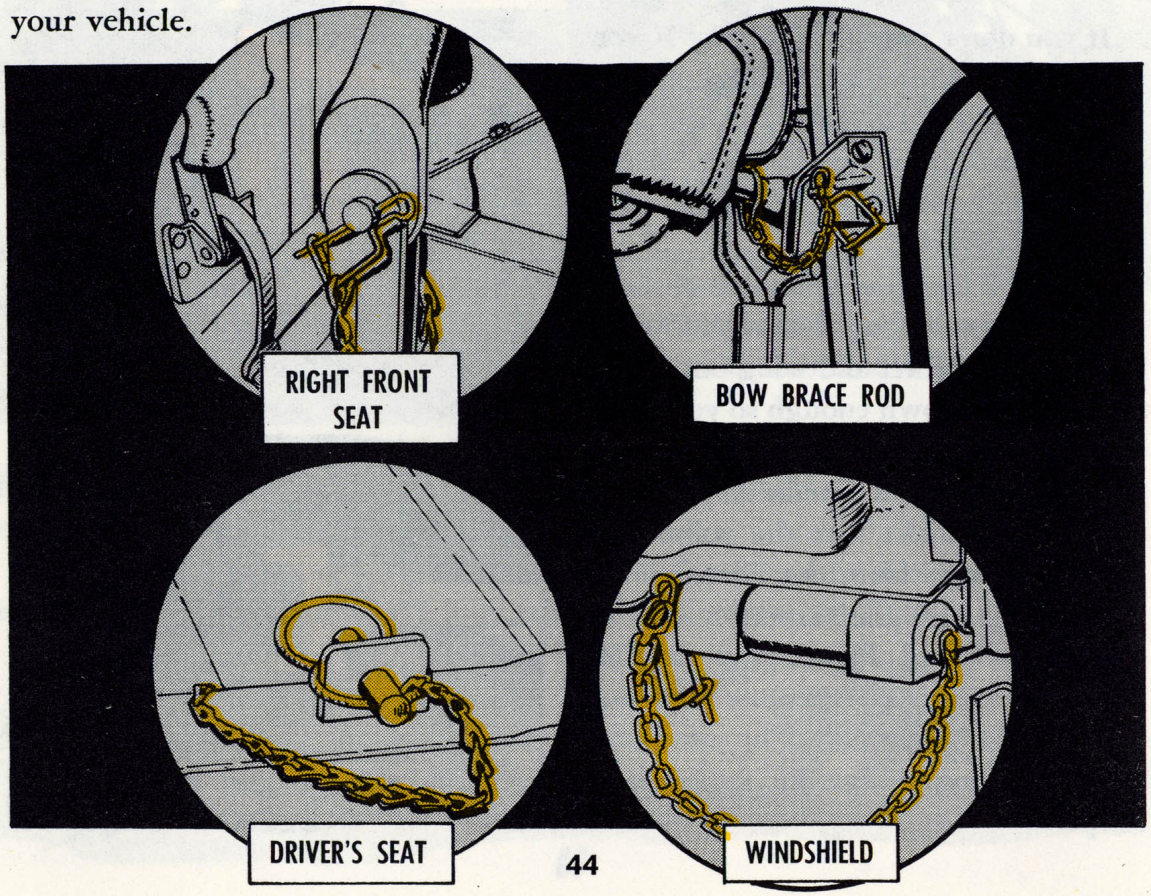
M151 ¼-TON TRUCK . . .

PIN LOST? USE BOLT

Now you can use ordinary bolts 'n' nuts when those retaining pins on your M151 ¼-ton truck go AWOL. This goes for all vehicles in the G838-series family.

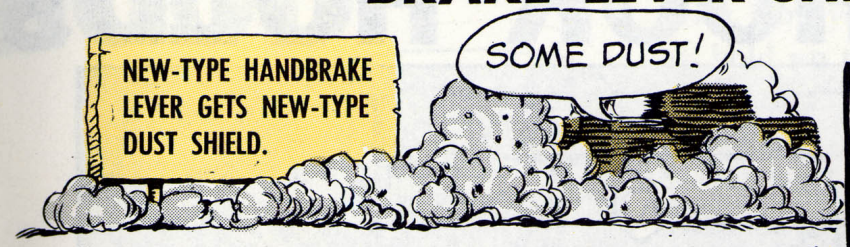
Some of these pins are non-supply items and hard to find at your cannibalization point. If you can't find the right pin, Article 247 in TB 750-981-1 (Jan 67) says you can use a standard nut 'n' bolt or any other kind of pin that'll fit good and do the job.

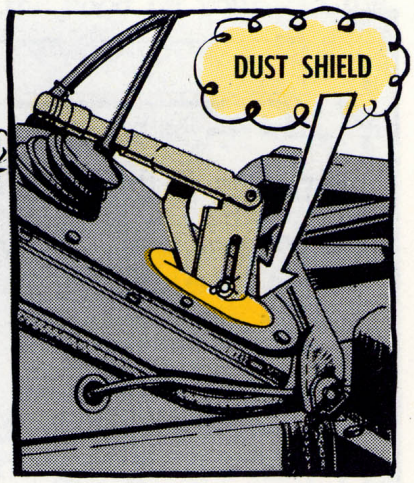
This TB article mentions only the seat holddown pins, but there's no reason it can't be applied to those other hard-to-find pins too. Like all "fixes" in the TB, this's a recommendation. You'll need your CO's OK to make this local SOP. Then you won't get gigged for having these strange-looking pins on your vehicle.



M151A1 ¼-TON TRUCK . . .

BRAKE LEVER SHIELD

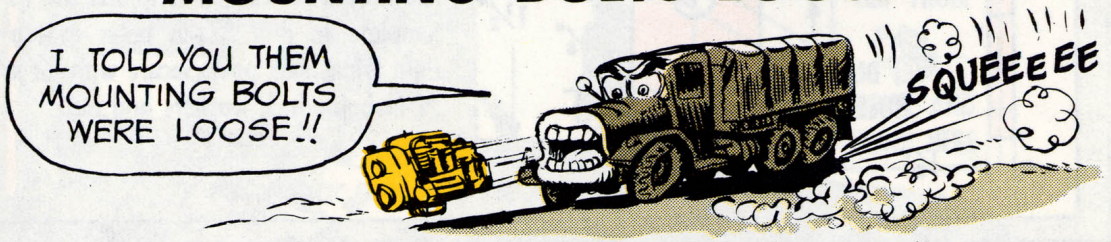




That's the word for your M151A1 ¼-ton truck if its serial number comes after 2K-4754. So you get Shield, Dust, Parking Brake, FSN 2530-832-5658, for your over-center type handbrake lever. This item's for -20P users but it's not in any supply publications yet — so make sure you specify RIC B24 when you request it.

2½-TON MULTIFUEL ENGINE . . .

MOUNTING BOLTS LOOSE?



Trust your girl and the weather forecast and your best friend — if you want to — but never take it for granted that tight engine mounts are going to stay tight.

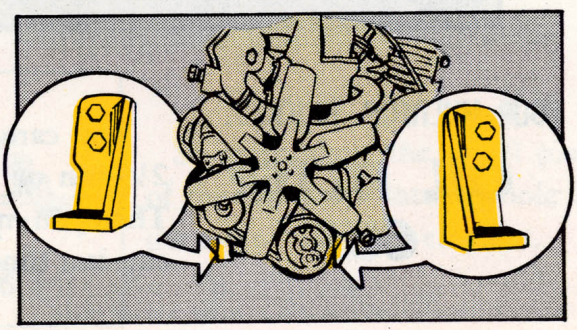
On your 2½-ton multifuel engine truck, vibration can work at those bolts 'n' nuts until the engine suddenly decides to take a nosedive into your radiator. What a mess!

Keep a close check, especially on those horizontal nuts 'n' bolts that fasten the front mounts to the engine. Get down in there, or underneath, real often and make sure they're tight. If they're loose, tighten 'em.

Waste no time on mounting bolts or nuts that've gotten the least little bit damaged — bent, cracked, threads stripped. Replace 'em rightaway with Bolt, FSN 5305-582-8545, and Nut, FSN 5310-933-7839.

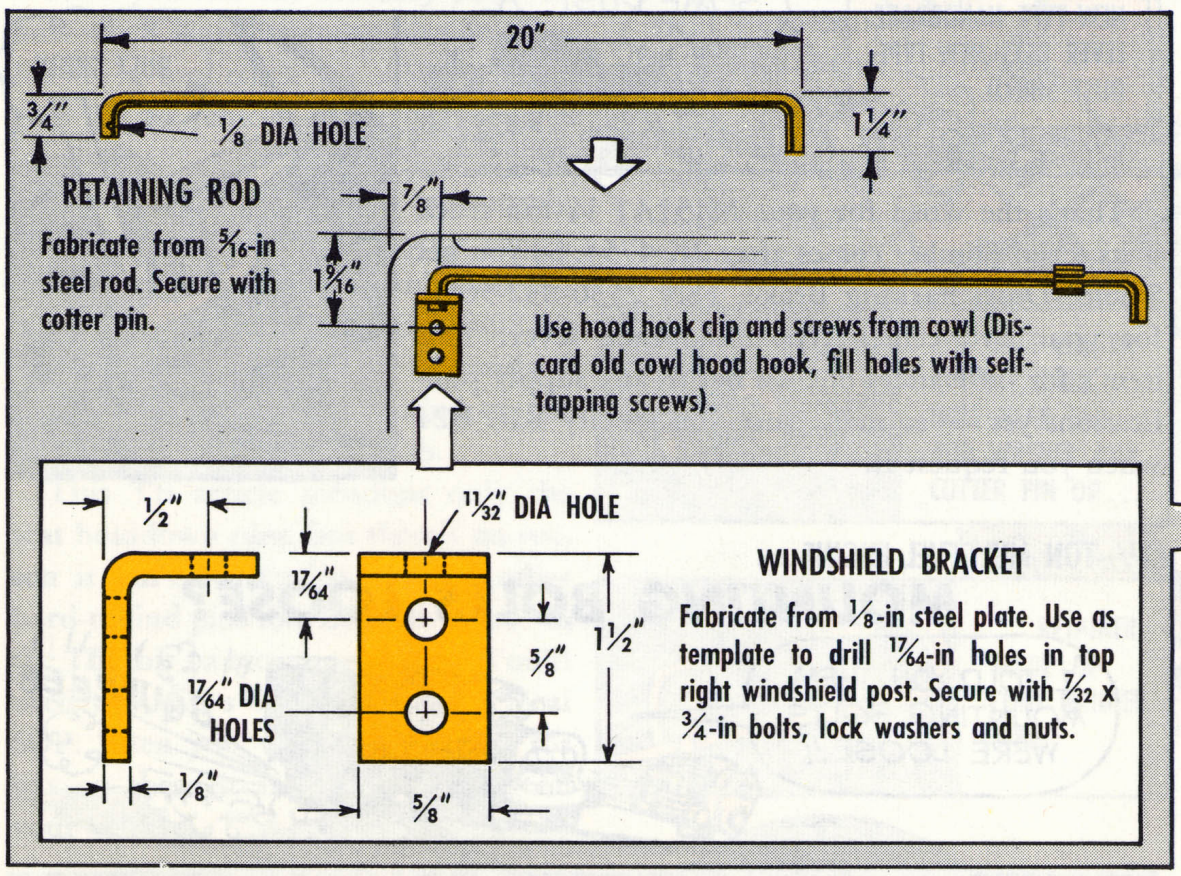
Torque 'em to 75-80 lb-ft.

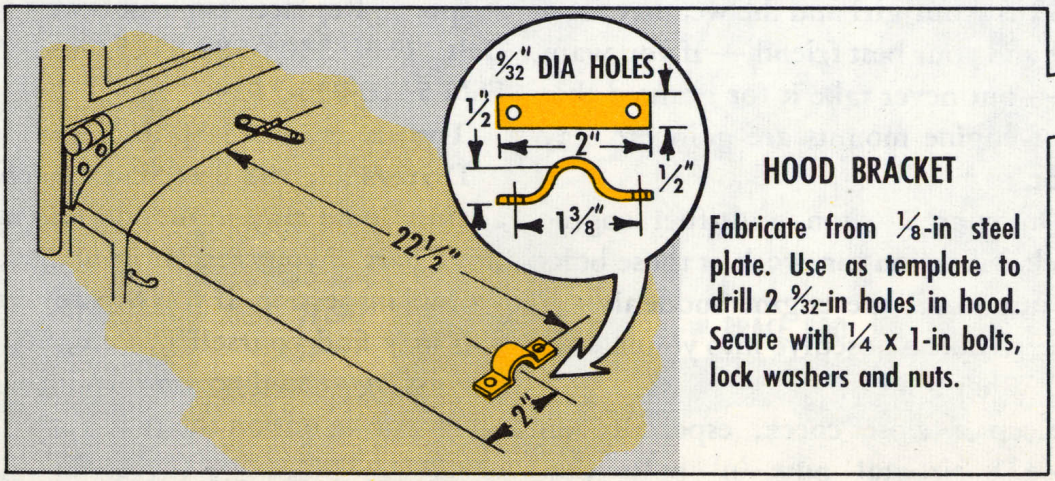
Drivers are the first line of defense against loose engine mounts. So make this a part of your reg'lar in-under-and-around inspection. If you slip up on this, you may find yourself in a mighty embarrassing — and uncomfortable — fix when you're out on the road.



GUN RING PROBLEM?

HOOK HOLDS





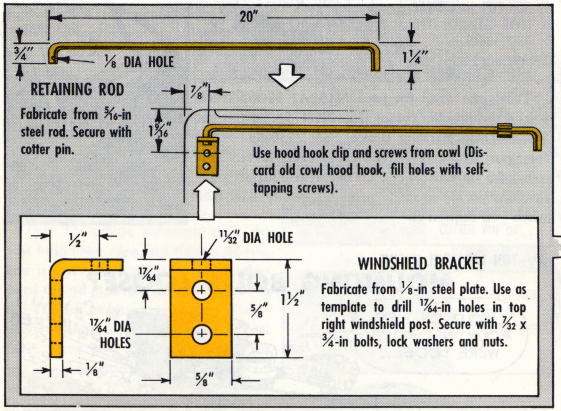
YOUR MULTIFUEL TRUCK...

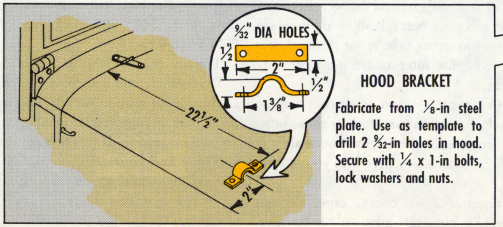
OIL FILTER CUP

You can flip your lid trying to figure out why your 2½-ton or 5-ton multifuel truck's oil filter is leaking. Then you may find that you flipped the oil filter element cup last time you installed a new filter element.

GUN RING PROBLEM?

HOOK HOLDS HOOD





Get rid of that broomstick, rope or wire. Now you can have a regular hook to hold up the hood on your 2½-ton truck that's equipped with a machine gun ring.

This's all fabricated except for a few common hardware items and 1 part from your truck's original hood hook setup. Article 247 in TB 750-933-1/3 (Jul 66) authorizes this fix for any G742-series or G744-series truck with the ring mount.

You may have to make slight changes as you go along to get this setup just right on your particular vehicle.

YOUR MULTIFUEL TRUCK...

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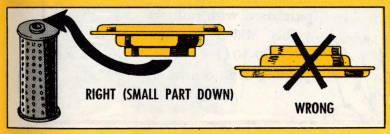

So remember, the small part of the cup drops into the hole in the top of the filter element.

HOOD

Get rid of that broomstick, rope or wire. Now you can have a regular hook to hold up the hood on your 2½-ton truck that's equipped with a machine gun ring.

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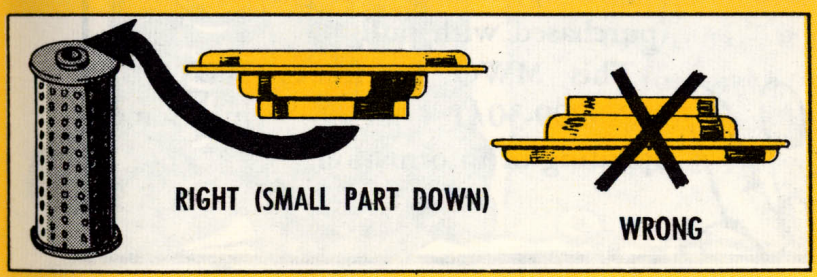

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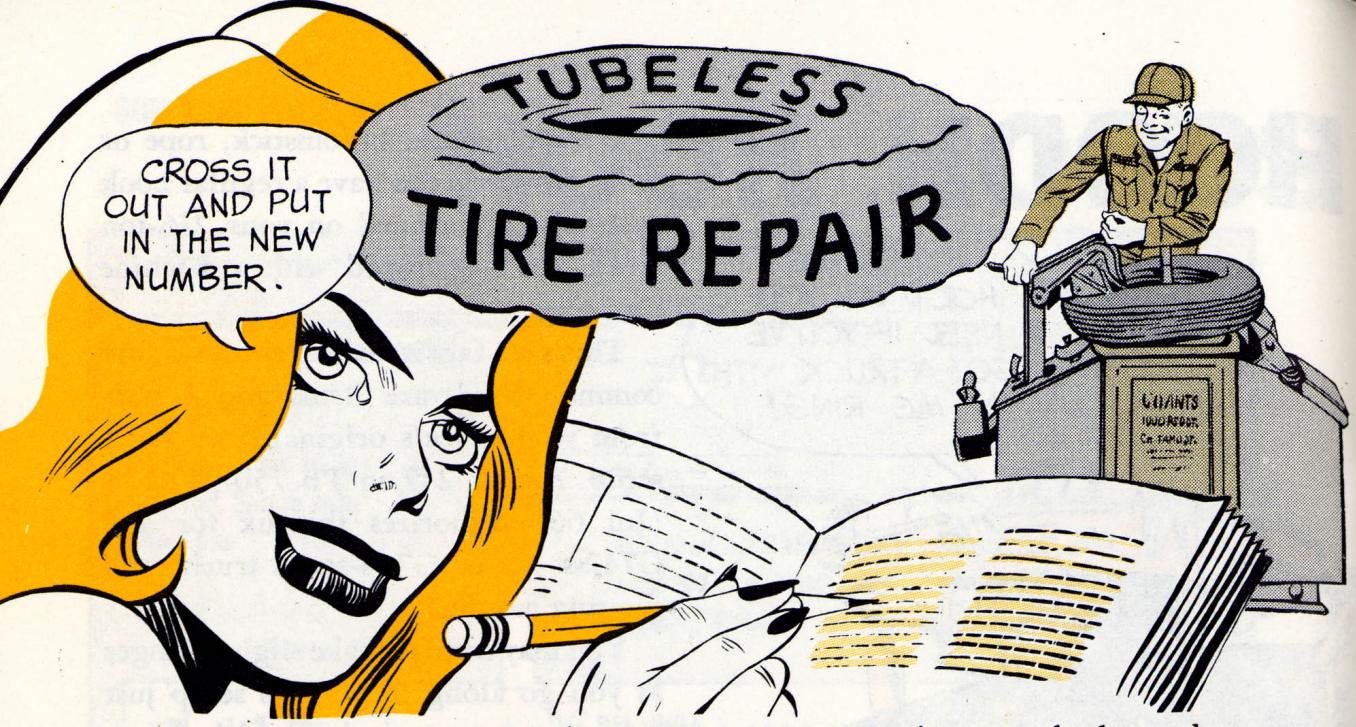
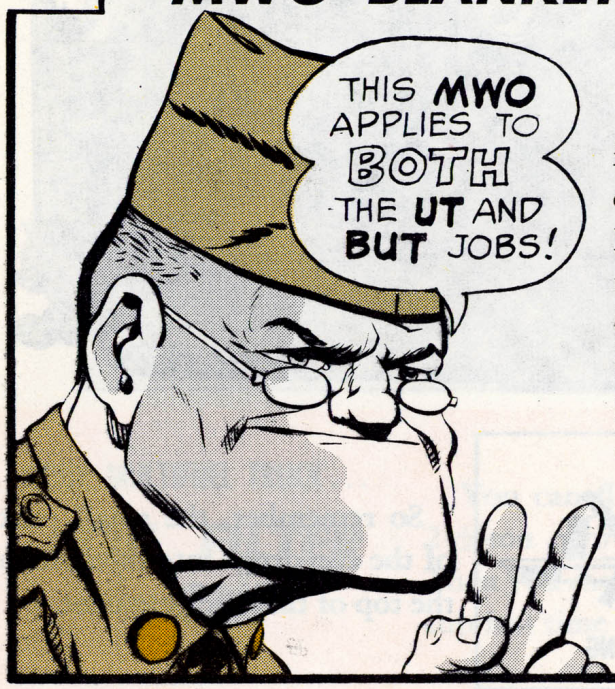


Make sure you get Ch 3 (Feb 67) to TM 9-1870-1. It gives you the latest dope on repair of tubeless tires—both commercial and tactical types. It includes demounting and mounting tools. It also shows you the new tubeless tire repair kit that you can use to repair punctures without taking the tire off its rim.

But make a change to your change. In Table 1, cross out FSN 4910-695-9634 for Mounter and Demounter, Pneumatic Tire. Instead, there's a new compressed air-operated mounter and demounter—FSN 4910-925-4110. Instructions in the TM don't go with this new piece of equipment, so make sure you don't lose the instruction booklet that comes with it.

MWO BLANKETS GENERATORS



Take another look at that generator in your M-series tactical wheeled vehicle. If it's a Model GHA-4802 UT or BUT generator, it gets the new spacer under MWO 9-2920-209-30/1 (Nov 66). The MWO mentions only UT (purchased without pully), but the MWO applies also to the BUT job (purchased with pully).

This MWO supersedes MWO 9-2920-209-30/1 (Jun 66)—just some updating of information.

M543, M543A2 WRECKERS . . .

GREASE IS OUT

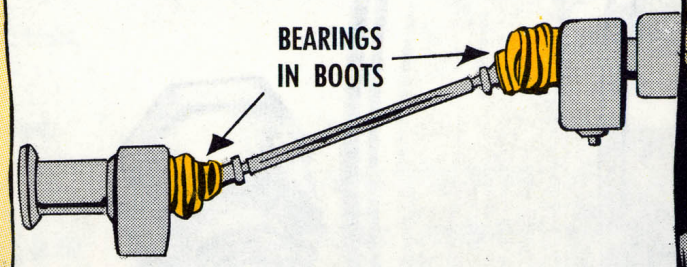
MAKE **SURE** THERE'S OIL IN THE BOOTS!

NO! NO! NO no! NO NO!

You can forget about greasing the universal seal bearings on your M543 or M543A2 5-ton wrecker.

These are the bearings you have at each end of the prop shaft running from your power divider seal housing to your bevel gear box seal housing.

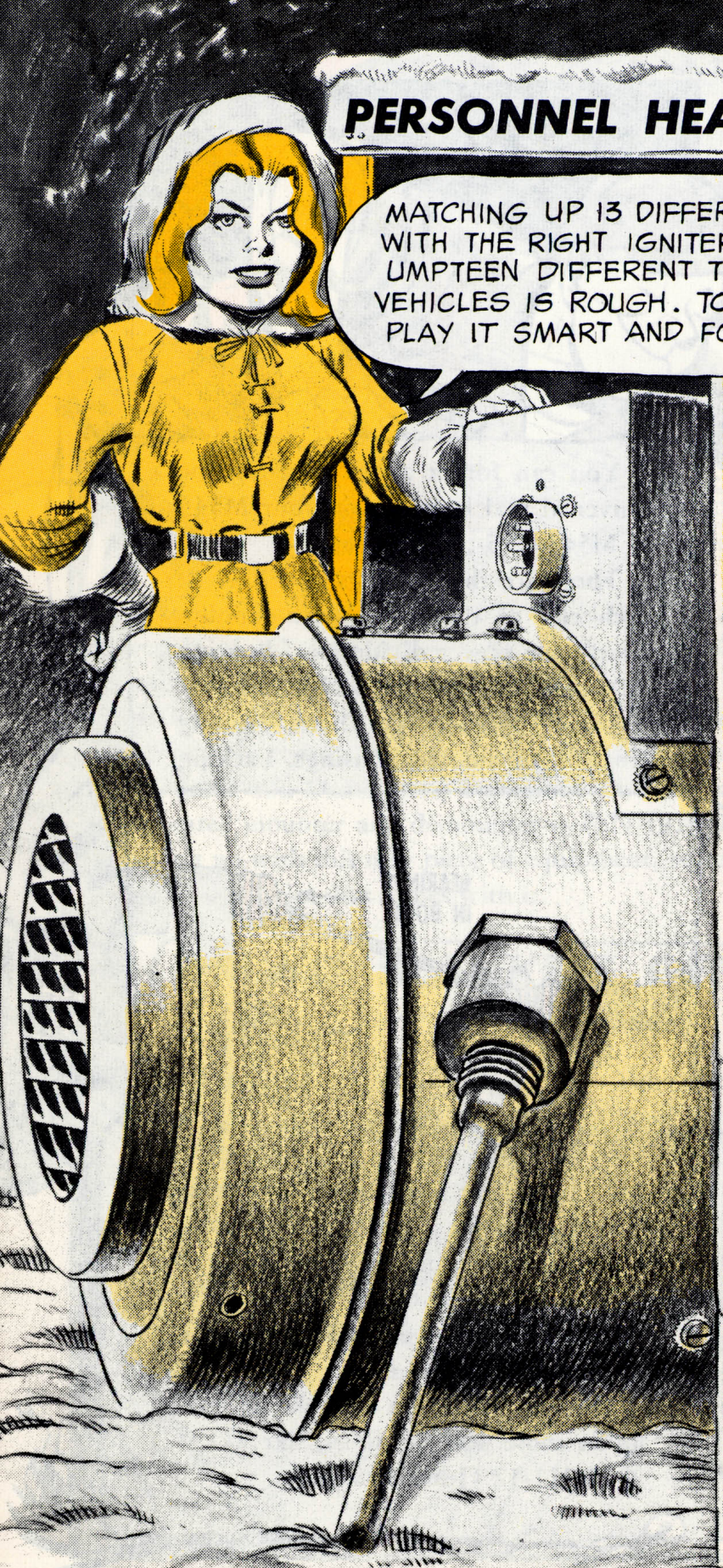
These bearings get better lubing from oil in the seal housings. Packing



with grease just blocks oil from getting into the bearings. Don't worry about oil hurtin' the boots. Fact is, if you pull back the boot and don't find any oil in there, you know the bearing's not getting the oil it should.

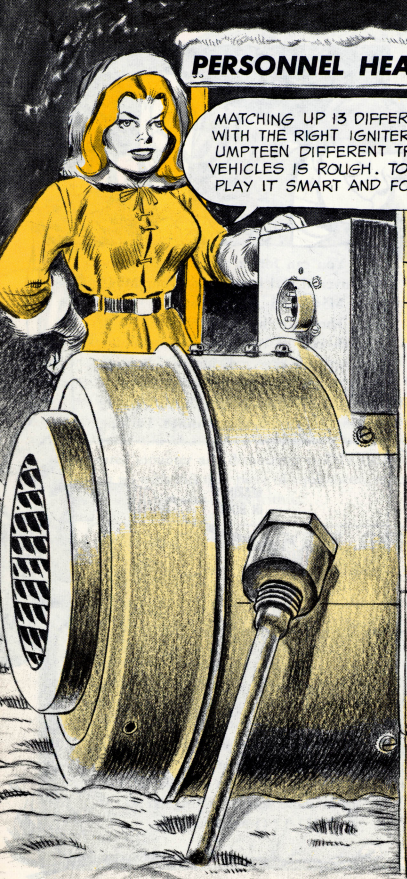
Just make sure you keep the oil level up in those seal housings, like LO 9-2320-211-12 (Jun 64) says.

PERSONNEL HEATER HOEDOWN



WHEELED

Vehicle	Heater
M38A1 ¼-ton truck (G758)	2540-039-7784
M151 ¼-ton truck (G838)	2540-319-5931 or 2540-736-8563
All Models ¾-ton (G741)	2540-692-8848
2½-ton truck (G742) gasoline and 5-ton truck (G744) gasoline	2540-692-8848
2½-ton truck (G749) and M220 van	2540-692-8848
2½-ton truck (G742) multifuel, 5-ton truck (G744) multifuel, and 10-ton (G792), multifuel	2540-960-3630
10-ton truck (G792) gasoline	2540-319-5931 or 2540-288-4963



Unpainted igniter barrels reflect so much heat that they sometimes melt igniter coil wires. Igniters FSN 4520-790-8417 and 2540-319-5933, are issued unpainted and should be dipped in heat-resisting black enamel paint (Spec Fed TT-E-496) before they are installed.

Dip $^{13}/_{16}$ inch of the igniter barrel into the enamel and air dry, being careful not to let the enamel plug the ventilating holes in the base of the igniter barrel.

Order the enamel as FSN 8010-297-2013 for the 1-qt can. You'll find it on page 13 of Fed Cat C8000-IL-A (Jan 66).

WHEELED VEHICLES

Vehicle	Heater	Igniter	Parts Kit Including Igniter
M38A1 ¼-ton truck (G758)	2540-039-7784	2540-319-5933	2540-656-2314
M151 ¼-ton truck (G838)	2540-319-5931 or 2540-736-8563	2540-319-5933	2540-656-2314
All Models ¾-ton (G741)	2540-692-8848	2540-770-0170	
2½-ton truck (G742) gasoline and 5-ton truck (G744) gasoline	2540-692-8848	2590-695-5164	
2½-ton truck (G749) and M220 van	2540-692-8848	2540-770-0170	
2½-ton truck (G742) multifuel, 5-ton truck (G744) multifuel, and 10-ton (G792), multifuel	2540-960-3630	4520-790-8417	2540-785-6349
10-ton truck (G792) gasoline	2540-319-5931 or 2540-288-4963	2540-319-5933 2540-371-6810	2540-656-2314 2540-656-2312

TRACKED VEHICLES

Vehicle	Heater	Igniter	Parts Kit Including Igniter
M41-series light tanks	2540-692-8848	2590-695-5164	
M48, M48A1 and M48C tanks	2540-319-5931 or 2540-288-4963	2540-049-4198 2540-371-6810	
M48A2, M48A2C	2540-336-8053 or 2540-204-2489	2540-049-4198 2540-333-1582	2540-656-2314 2540-656-2315
M48A3 and M60/M60A1 tanks, including M60A1 tank bridge launcher, and M728 CEV, M103 tanks, M107, M108, M109 and M110 SP artillery and M578 recovery vehicle	2540-854-4449 or 2540-967-3352	4520-790-8417 2540-941-8681	2540-785-6349 2540-055-7573
M113 PC family, (G294) gasoline	2540-656-4105 or 2540-555-9230	2540-049-4198 or 2540-333-1582	2540-656-2314 or 2540-656-2315
M113PC family (G312) diesel	2540-854-4449	4520-790-8417	2540-785-6349
M114/M114A1 recon carriers and M116 cargo carrier	2540-319-5931 or 2540-688-9962	2540-049-4198	2540-656-2314
SP artillery, M42A1, M44, M44A1, M52, M52A1, M53 and M55	2540-692-8848	2590-695-5164	
M88 VTR	2540-555-9230	2540-049-4198	2540-656-2314

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VEHICLES

Igniter	Parts Kit Including Igniter
2540-319-5933	2540-656-2314
2540-319-5933	2540-656-2314
2540-770-0170	
2590-695-5164	
2540-770-0170	
4520-790-8417	2540-785-6349
2540-319-5933	2540-656-2314
2540-371-6810	2540-656-2312

TRACKED VEHICLES

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M48, M48A1 and M48C tanks	2540-319-5931 or 2540-288-4963	2540-049-4198 2540-371-6810	
M48A2, M48A2C	2540-336-8053 or 2540-204-2489	2540-049-4198 2540-333-1582	2540-656-2314 2540-656-2315
M48A3 and M60/M60A1 tanks, including M60A1 tank bridge launcher, and M728 CEV, M103 tanks, M107, M108, M109 and M110 SP artillery and M578 recovery vehicle	2540-854-4449 or 2540-967-3352	4520-790-8417 2540-941-8681	2540-785-6349 2540-055-7573
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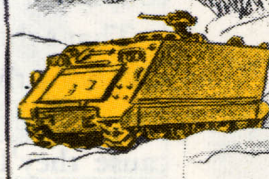
M113PC family (G312) diesel	2540-854-4449	4520-790-8417	2540-785-6349
M114/M114A1 recon carriers and M116 cargo carrier	2540-319-5931 or 2540-688-9962	2540-049-4198	2540-656-2314
SP artillery, M42A1, M44, M44A1, M52, M52A1, M53 and M55	2540-692-8848	2590-695-5164	
M88 VTR	2540-555-9230	2540-049-4198	2540-656-2314



CV CREWMEN...

FILTER UNIT VALVE CHECK

Here's an easy one for you.

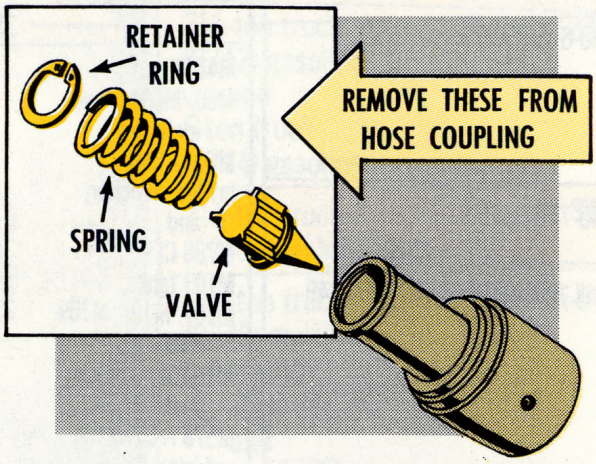
The M13 and M13A1 gas particulate filter units — in M60 and M60A1 tanks and M728 combat engineer vehicles — must be checked soonest for an unwelcome self-sealing valve in the air hose couplings.

That's the quick disconnect couplings that hook the air hoses to the mask canisters. The valves must come out because they'll block pre-heating of the hose in cold weather and they can cause damage to the filter unit's electric heaters.

Be sure to check the coupling for each mask. Just pull the coupling from its orifice connector and check inside the coupling for a valve. If you find a coupling empty you're in luck, just reanchor the coupling. But, if it's rigged with a valve here's what you have to do:

Unlatch the hose clamp and remove the coupling from the hose.

Then pry out the retaining ring holding the spring and valve in the coupling. Once the retaining ring flips out the spring and valve will slide out easy-like.



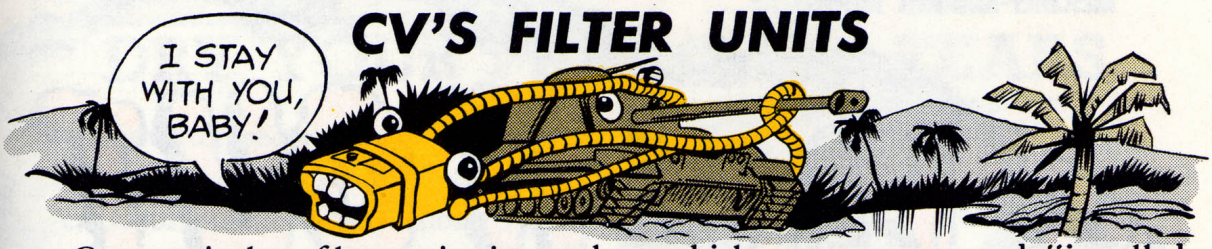
Replace the empty coupling in the hose and lock it in place with the hose clamp. Anchor the coupling to its orifice connector and you're done.

You can discard the retaining rings, springs and valves.

Record the job on the filter unit's DA Form 2408-3.

Hose coupling, FSN 4730-935-1643 minus the valve is getting listed in changes to filter unit TM's.

CV'S FILTER UNITS

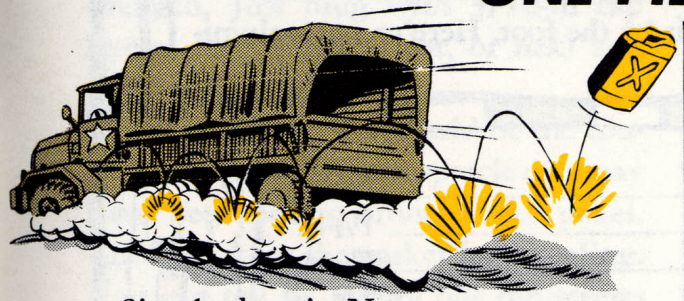


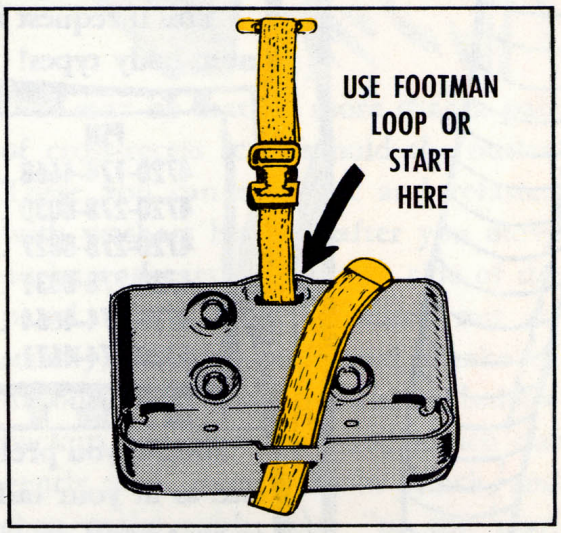
Gas particulate filter units in combat vehicles are now tagged "installed equipment." That means, no matter when or where a filter unit was installed, it must stay with the equipment all the way back to CV rebuild.

The filter units will be deleted from TOE's eventually, but for now EIR and Maintenance Digest TB 3-600 (5 Aug 66) gives the word. CV's TM's, too, will be changed to cover the filter units.

Only exceptions to the new rule are the M113 APC's and M42A1 40-mm SP guns. Filter units are not authorized for those vehicles.

GAS AND WATER CANS . . . ONE-PIECE STRAP





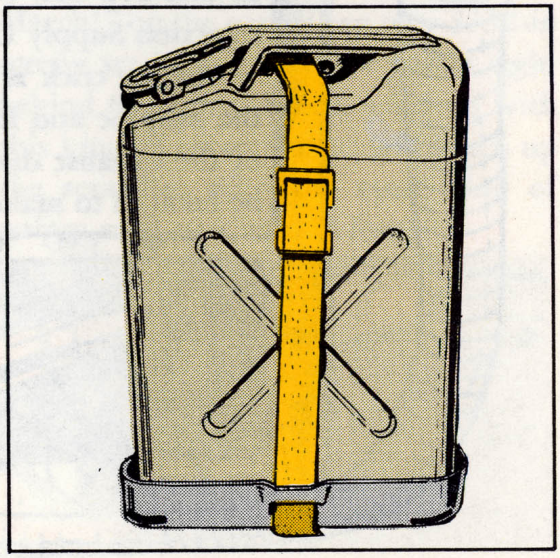
Simple does it. Now you can secure your gas or water can on your tactical wheeled vehicle with one long strap. When the 2-piece job fastened to the bracket gives out, just replace it with —

Strap, FSN 2540-968-4060, listed in Fed Cat C2540-IL-A (Apr 66).

Start the tip end of the strap down thru the back slot in your bracket — or thru the footman loop if your setup has one. Run the strap down behind and under the bracket out to the front. Then thread it thru the front slot and up.

Now you set your gas or water can in the bracket, pull the buckle end thru under the can handle — and buckle up.

If you happen to be runnin' around without a can in the bracket, you'd better keep the strap buckled anyway so you don't lose it.



MISCHIEF-MAKING MONOXIDE . . .

PIPE IT OUT

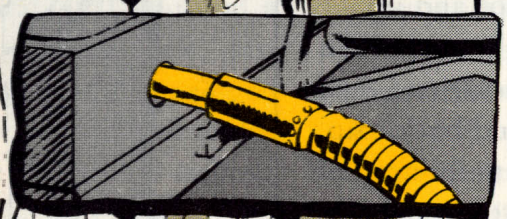
What you don't smell can hurt you, when you have to test engines inside the shop or tent. Flexible tube extensions to carry deadly carbon monoxide fumes outdoors come in Fed Cat C-4720-IL-A. Authorization can come from your safety officer.

You'll request it by the foot. Here're some aluminum-body types!

FSN	I. D. SIZE
4720-174-4668	1-in.
4720-278-8030	1½-in.
4720-278-8027	1¾-in.
4720-278-8031	2-in.
4720-174-4664	3-in.
4720-174-4671	4-in.

Should you prefer steel, or if you need an oddball size to fit your tailpipe, there's a goodly assortment in that Fed Cat. Use RIC S9C for the Defense Construction Supply Center, Columbus, Ohio.

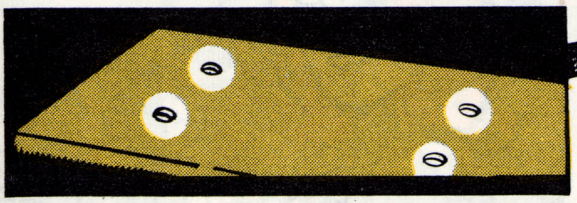
But the trick is to get a size that fits snugly over the tailpipe and far enough out the door. The part of the exhaust that leaks in where you work could be enough to make you partly dead—or worse!

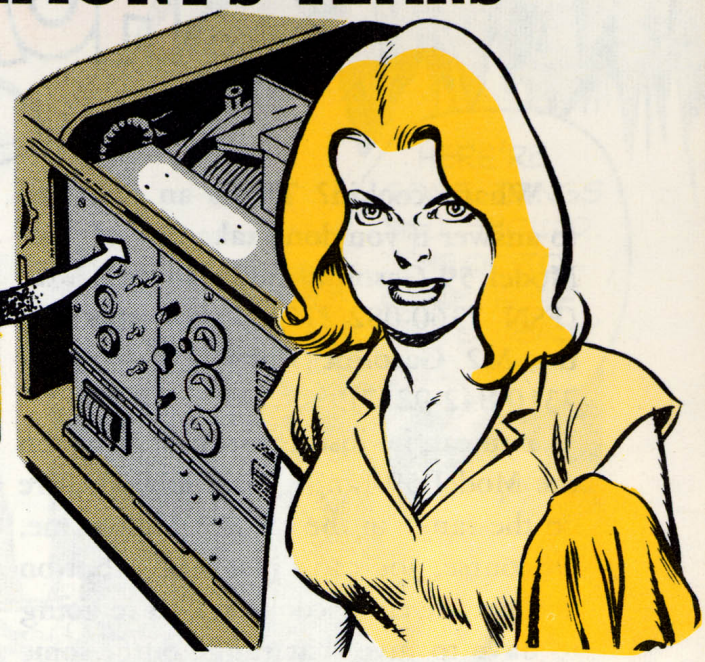


CLIP THE DRIP . . .

DRY YOUR FERMONT'S TEARS

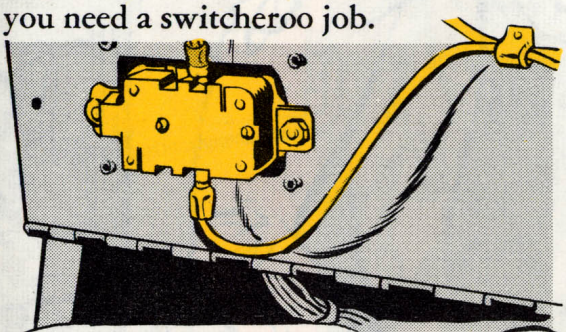
Rainwater seeping into your International-Fermont 10 KW SF-10-MD generator outfit? Likely those 4 holes on top of the control panel are part of the trouble.

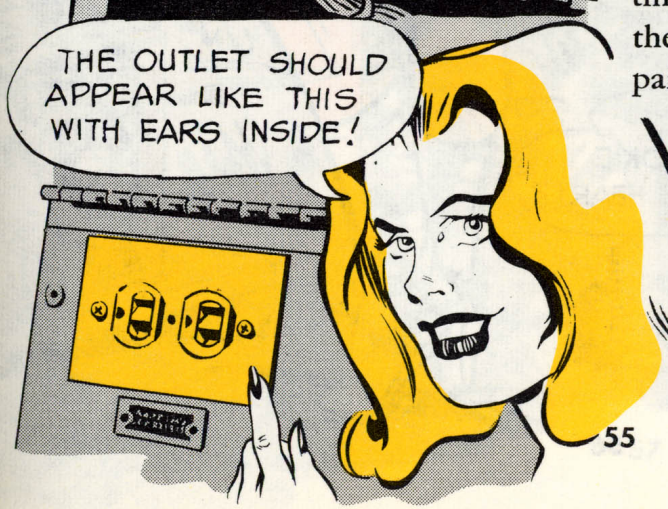




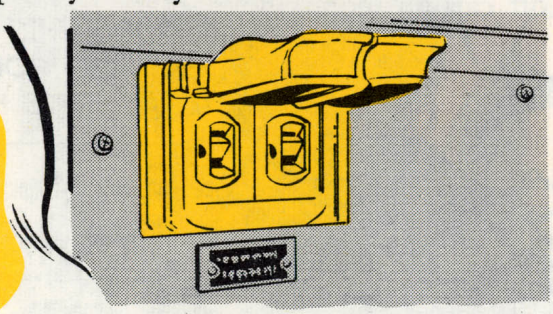
Those 4 holes were put in for a fire extinguisher bracket, but plans got changed. Just plug with 3/16-in cap screws (round head, slot, or hex) and touch up with paint.

Another leak point could be the convenience outlet. The receptacle ears may have been put in front of the panel. That will keep the gasket from sealing. You can tell by taking out the screws holding the lower hinged panel and swinging it up. Unless it looks like this, you need a switcheroo job.





It may be that no more than a pair of cross-recess screws hold the outlet. These you can take out and refasten with washers beneath after you move outlet and ears to the back side of the panel. On a 2-screw pressed nut assembly, though, you'll need to take off the outlet and cover, put a heavy hollow backup bar over the nuts, punch out gently with about a ⅛-in punch, and then make with your "to the rear, March!" on the ears. Then new 3/32-in screws set in will hold the gasket tight behind the cover. You'll wind up with this kind of arrangement and touch up the scratches with the same kind of painty stuff you used before.

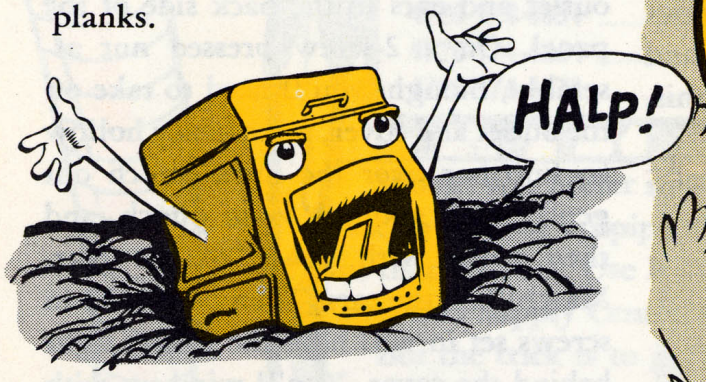


HOME ON THE

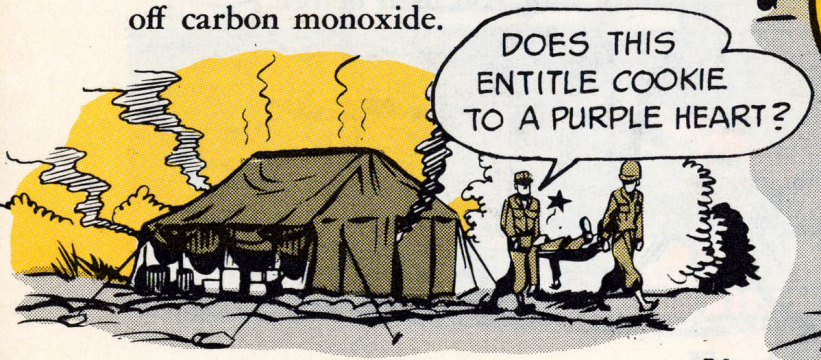
What's cookin? That's an easy one to answer if you don't take care of your Model 59 Gasoline Field Range Outfit (FSN 7360-082-2153), and especially the M2 Gasoline Burner Unit (FSN 7310-842-9247).

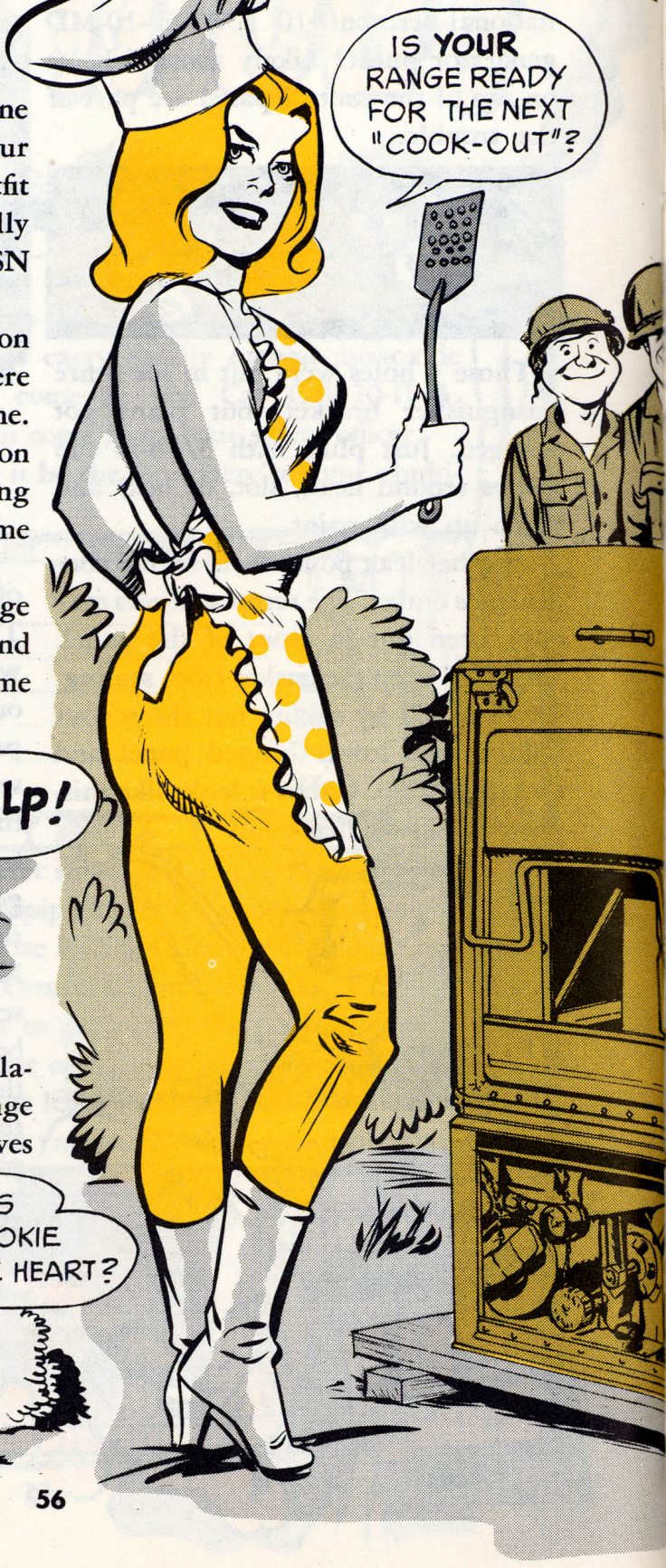
You can be just as much at home on the Model 59 range outfit as you were on the range in the kitchen back home. Of course, you can't just push a button and get the chow cooked. You're going to have to give that range outfit some of that TLC.

If you're going to set up the range in the field, try to pick a level site, and if the ground's soft, put down some planks.



It's a must to have plenty of ventilation if you're going to install your range indoors (even in a tent), because it gives off carbon monoxide.





HOME ON THE RANGE

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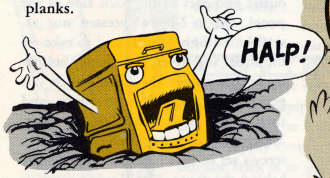

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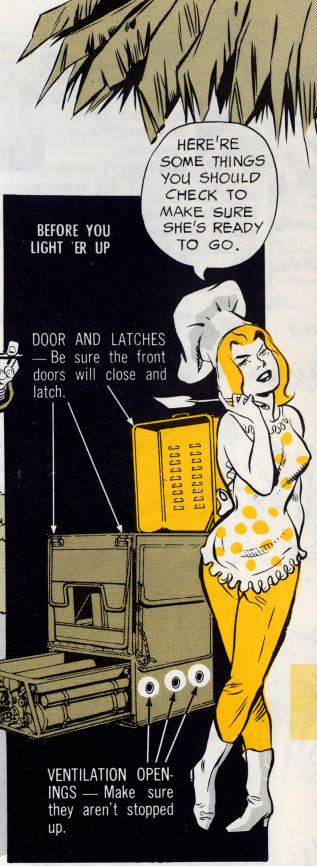
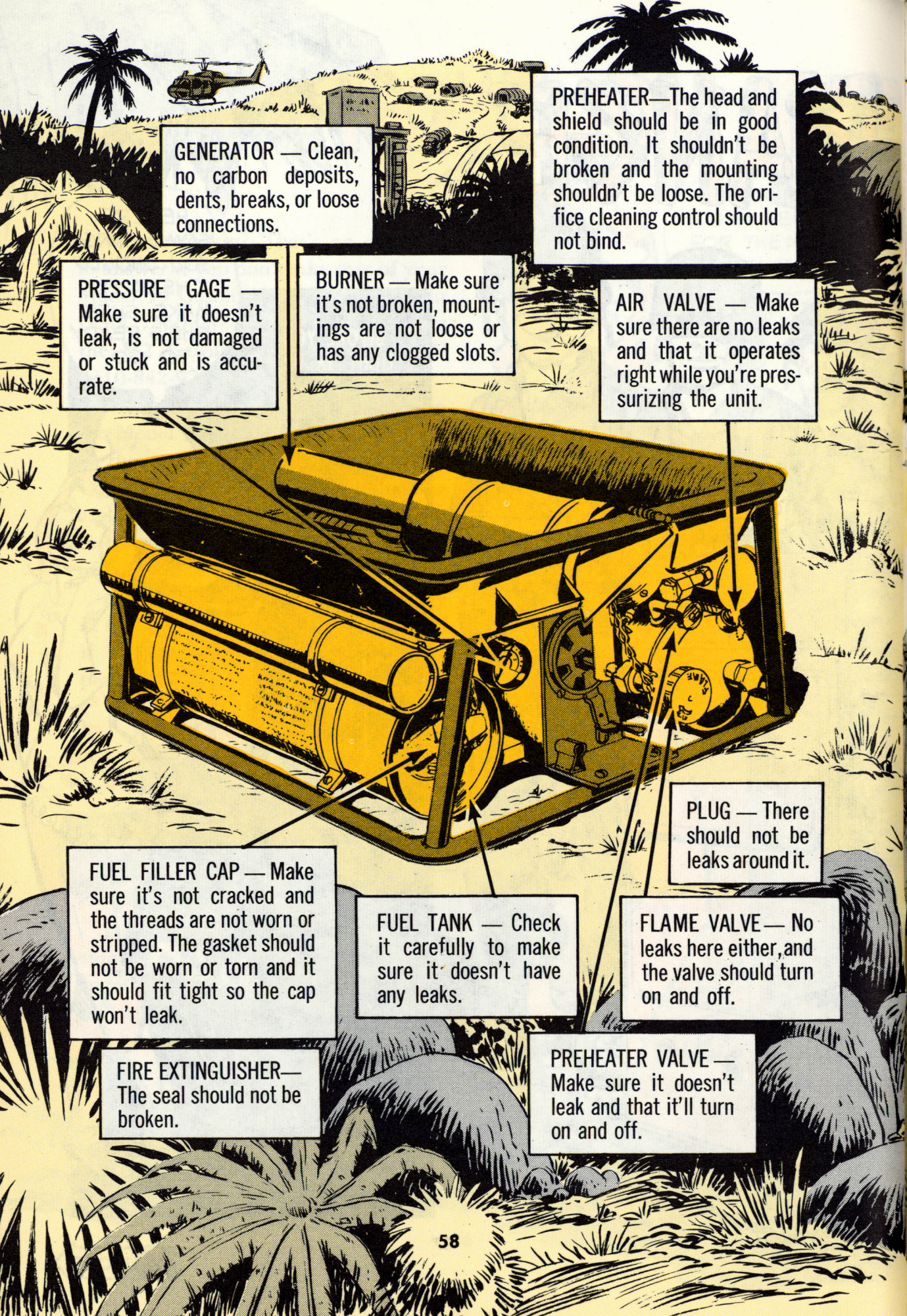


MORE

RANGE
HERE'RE SOME THINGS YOU SHOULD CHECK TO MAKE SURE SHE'S READY TO GO.
BEFORE YOU LIGHT 'ER UP
DOOR AND LATCHES — Be sure the front doors will close and latch.
VENTILATION OPENINGS — Make sure they aren't stopped up.

PS MORE


GENERATOR — Clean, no carbon deposits, dents, breaks, or loose connections.
PREHEATER—The head and shield should be in good condition. It shouldn't be broken and the mounting shouldn't be loose. The orifice cleaning control should not bind.
PRESSURE GAGE — Make sure it doesn't leak, is not damaged or stuck and is accurate.
BURNER — Make sure it's not broken, mountings are not loose or has any clogged slots.
AIR VALVE — Make sure there are no leaks and that it operates right while you're pressurizing the unit.
PLUG — There should not be leaks around it.
FUEL FILLER CAP — Make sure it's not cracked and the threads are not worn or stripped. The gasket should not be worn or torn and it should fit tight so the cap won't leak.
FUEL TANK — Check it carefully to make sure it doesn't have any leaks.
FLAME VALVE — No leaks here either, and the valve should turn on and off.
FIRE EXTINGUISHER— The seal should not be broken.
PREHEATER VALVE — Make sure it doesn't leak and that it'll turn on and off.

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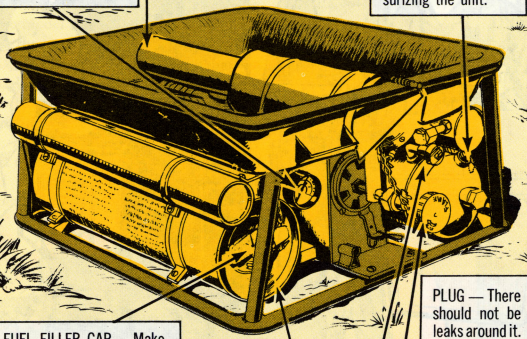

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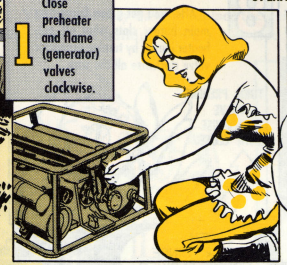
PREHEATER VALVE — Make sure it doesn't leak and that it'll turn on and off.

OPERATION

1 Close preheater and flame (generator) valves clockwise.

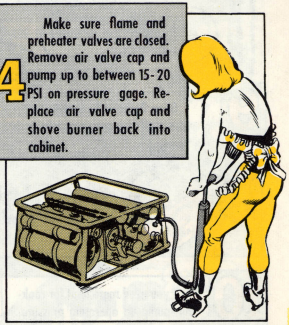


2 Stand burner unit on end and remove fuel filler cap.

NEVER REMOVE CAP WHILE OPERATING OR NEAR OPEN FLAME — THAT MEANS NO SMOKING.

3 Fill fuel tank with approximately 2 gallons of **gasoline, automotive:** combat, MIL-G-3056, Type I. Replace filler cap and hand tighten.

4 Make sure flame and preheater valves are closed. Remove air valve cap and pump up to between 15-20 PSI on pressure gage. Replace air valve cap and shove burner back into cabinet.

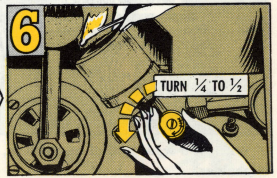


5 Leave about 12 inches sticking out so you can clean preheater orifice. Turn cleaner handle completely around 2-3 times. Finish with handle pointing down.

a. Place lighted match to top of burner head and open preheater valve handle ¼-½ turn counterclockwise.

b. Let preheater burn for 1 minute after it lights, then turn preheater valve counterclockwise all the way.

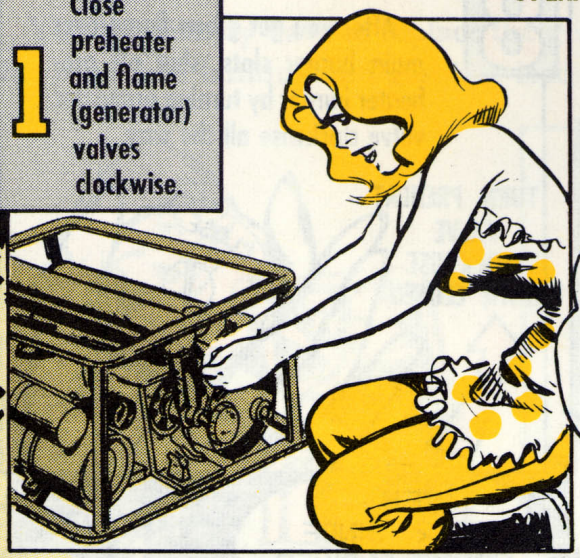
6



MORE

OPERATION

1 Close preheater and flame (generator) valves clockwise.



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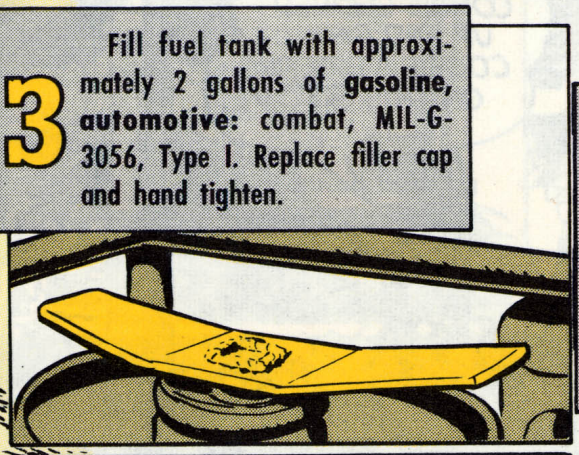

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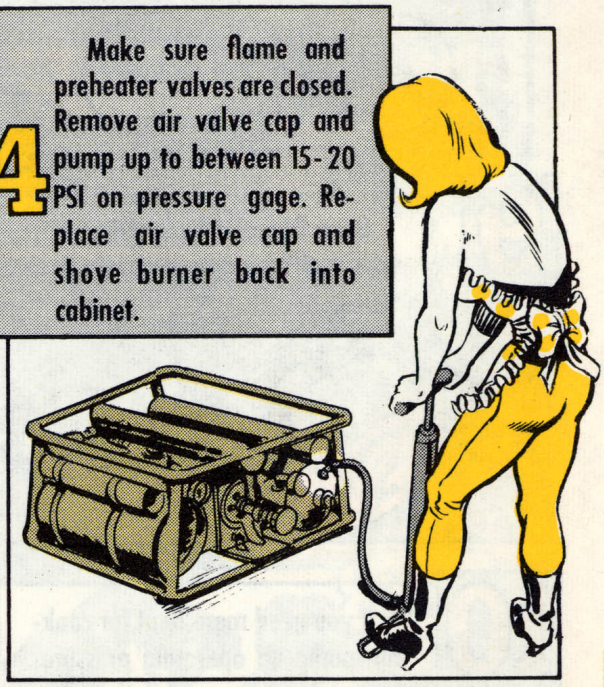

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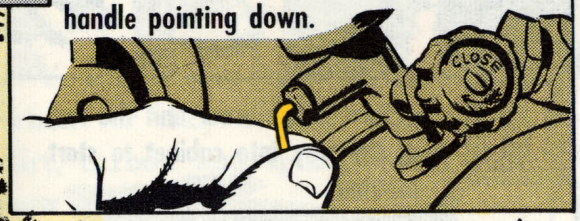
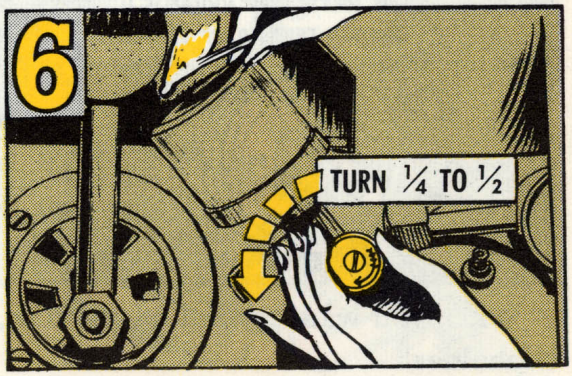


6

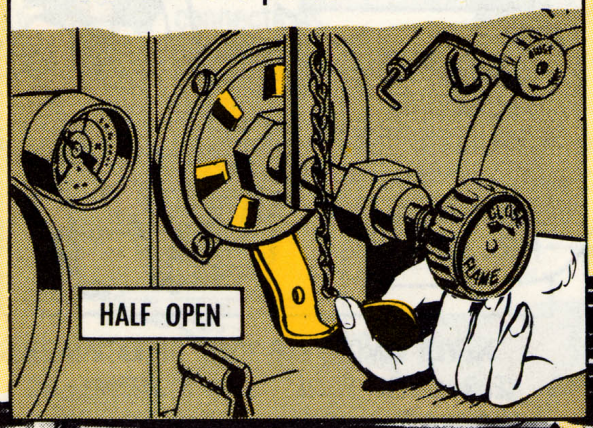
a. Place lighted match to top of burner head and open preheater valve handle ¼-½ turn counterclockwise.

b. Let preheater burn for 1 minute after it lights, then turn preheater valve counterclockwise all the way.

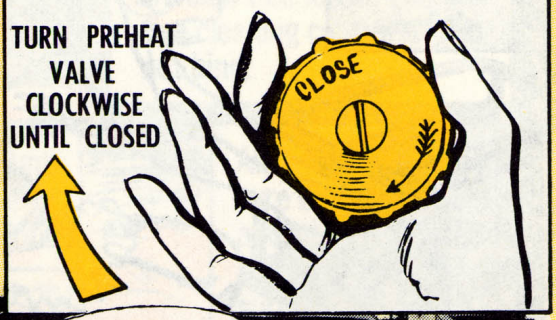


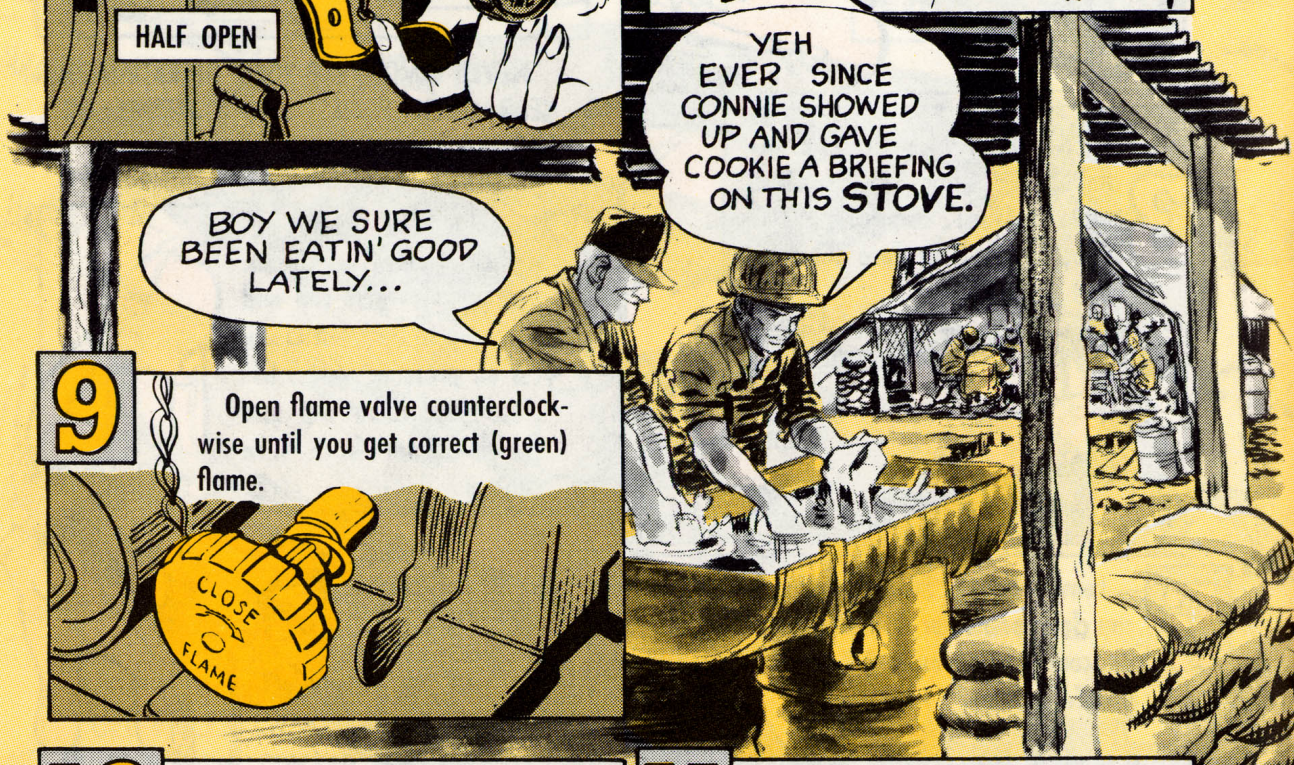
PS MORE

7 Let preheater burn about 3 minutes — or until all of generator is hot to touch. Adjust air shutter half open for green flame. If you get yellow flame, turn flame valve clockwise and continue to preheat.



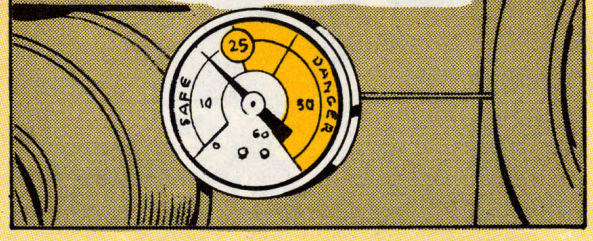
8 After you get green flame over main burner slots, shut off preheater burner by turning preheater valve clockwise all the way.





9 Open flame valve counterclockwise until you get correct (green) flame.

10 If you need more heat for cooking, pump up operating pressure. But **never** use pump if the gage already reads over 20 PSI.

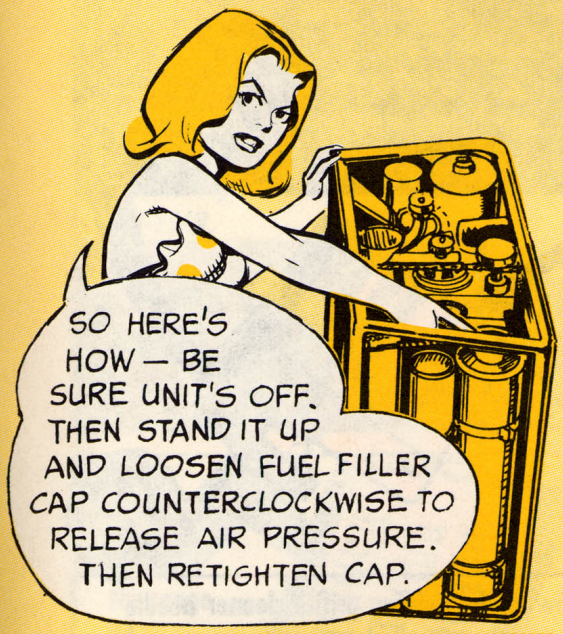


11 Now push burner unit the rest of the way into cabinet to start cooking.

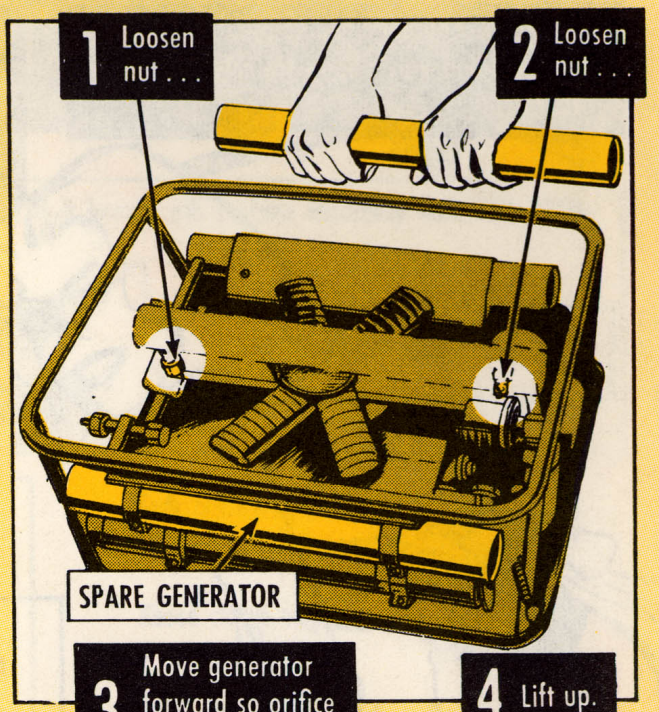
When you want to shut off the unit, close flame valve and place knob in its clipholder.

GENERATOR REPLACEMENT

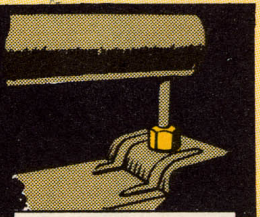
You'll probably have to replace the generator after 450-500 hours operation, due to carbon buildup and gasoline lead deposits.



DO NOT RELEASE PRESSURE NEAR ANY OPEN FLAME.



5 Remove spare generator from side brackets. Remove inlet protector plug and orifice protector cap. Check that flame valve is shut. Transfer preheater shield to new generator. Install new generator. Make sure rear connecting nut is tight enough to prevent leaking.



BURNER CLEANING

You'll have to clean the burner slots whenever they become clogged with dirt, carbon and spilled food. Here's how:

PS MORE

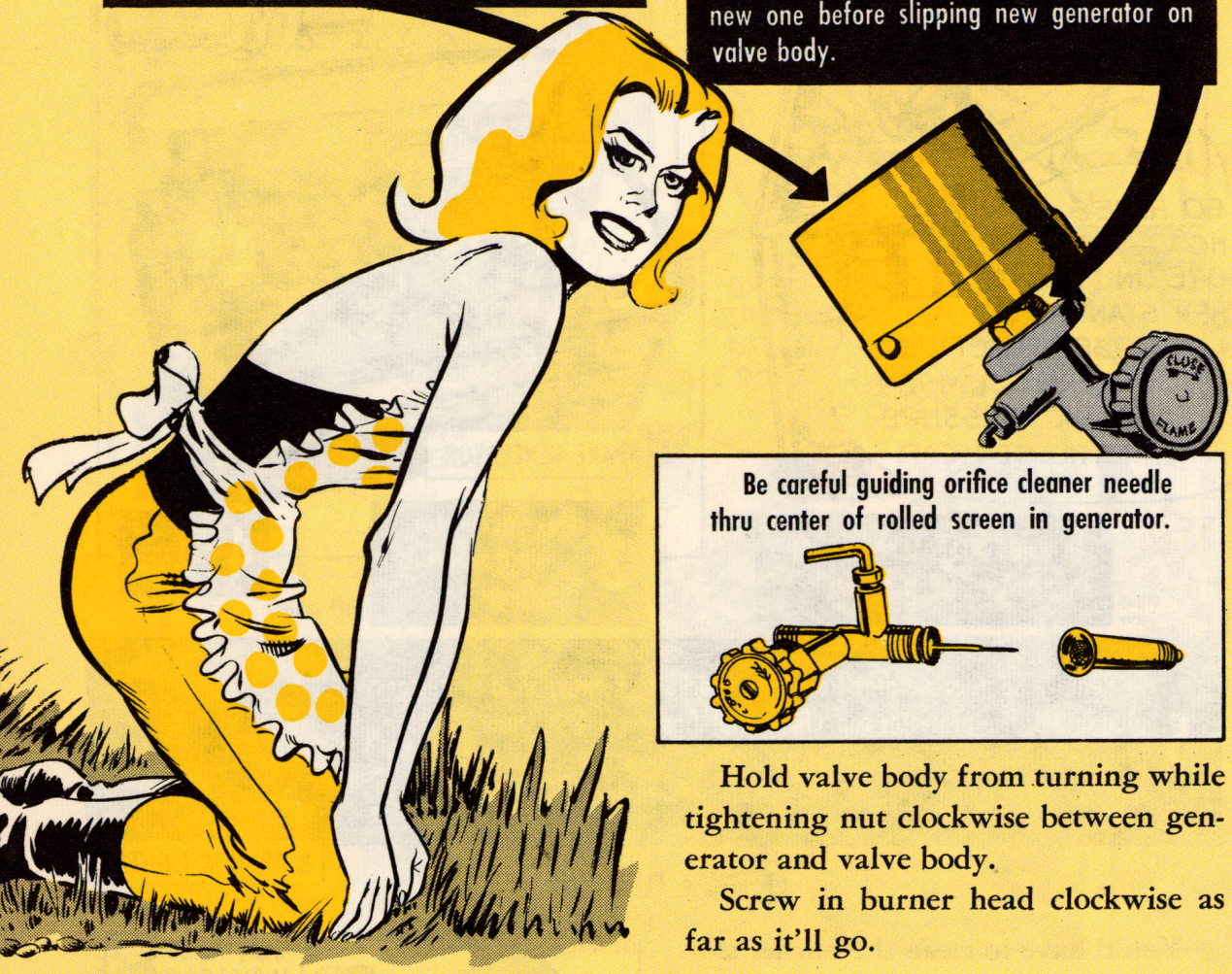
PREHEATER GENERATOR REPLACEMENT

You also have to replace the preheater generator whenever it gets clogged with carbon and lead deposits. Here's how:

Unscrew burner head counterclockwise while holding valve body from turning with other hand.

Loosen nut holding generator to valve body while holding valve body from turning.

Lift off old generator and change nut to new one before slipping new generator on valve body.



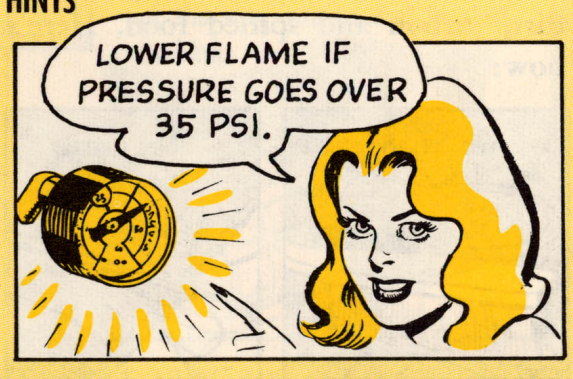
Be careful guiding orifice cleaner needle thru center of rolled screen in generator.

Hold valve body from turning while tightening nut clockwise between generator and valve body.

Screw in burner head clockwise as far as it'll go.

HELPFUL HINTS

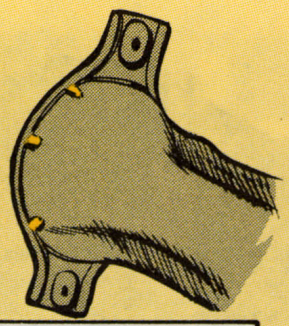
If the pressure goes over the safe operation range (into the red area of the gage), then shut the unit down and let it cool. Then remove the air valve cap and push in on the air valve until the pressure is reduced to the safe operating range. Replace cap and relight burner in usual manner.



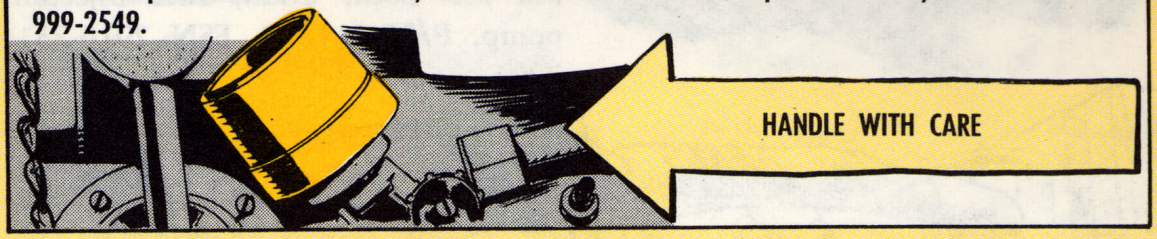
(DO NOT RELEASE THE FUEL AIR PRESSURE WHILE SMOKING OR NEAR AN OPEN FLAME).

Leave room for fuel expansion inside tank in hot climate.

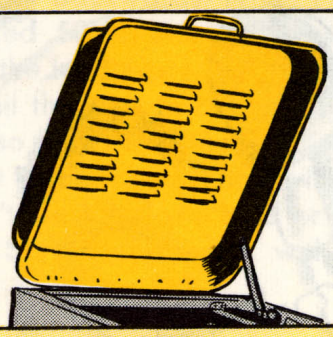
Poor spot welds on mixing chamber flange cause air spaces between mixing chamber and air control shutter . . . you lose flame control. Either replace mixing chamber (FSN 7310-999-2497) or have support reweld flange.



Handle preheater head assembly with care. If it breaks off, replace assembly with FSN 7310-999-2549.



Go easy lifting the range lid . . . or it'll break off.

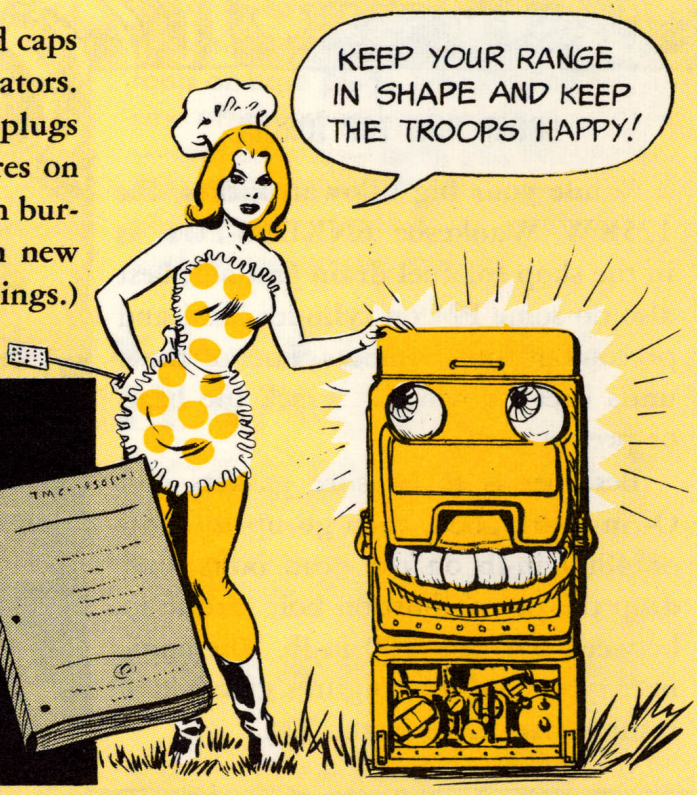


Your burner uses ½ gal gasoline each hour of continuous operation.

Those sharp edges on the cabinet can cut hands.

Easy on the chain holding the flame valve knob. A broken chain leads to a lost knob.

Keep metal protector plugs and caps from initial issue spare generators. Throw away plastic caps and plugs when installing replacement spares on burner unit. (Operating heat from burner will melt plastic and shorten new generator life by fouling up openings.)



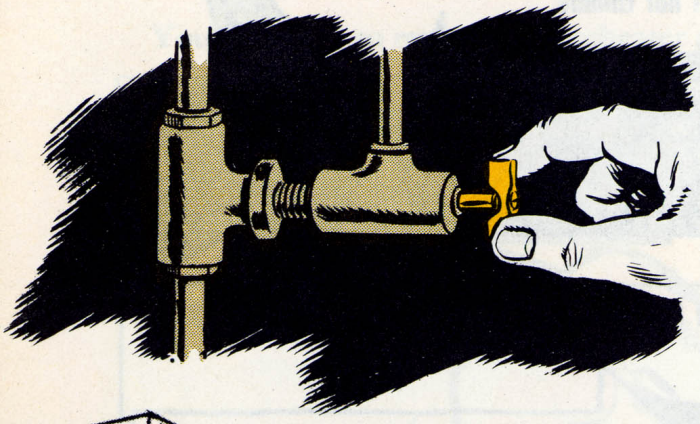
BASIC ISSUE ITEMS —

CASE, MAINTENANCE AND OPERATIONAL MANUALS: cotton duck, water repellent, mildew resistant (GE) FSN 7520-559-9618.

TM 10-7360-204-12 (Jul 66), Including Repair Parts

PS END

WAUKESHA POOP



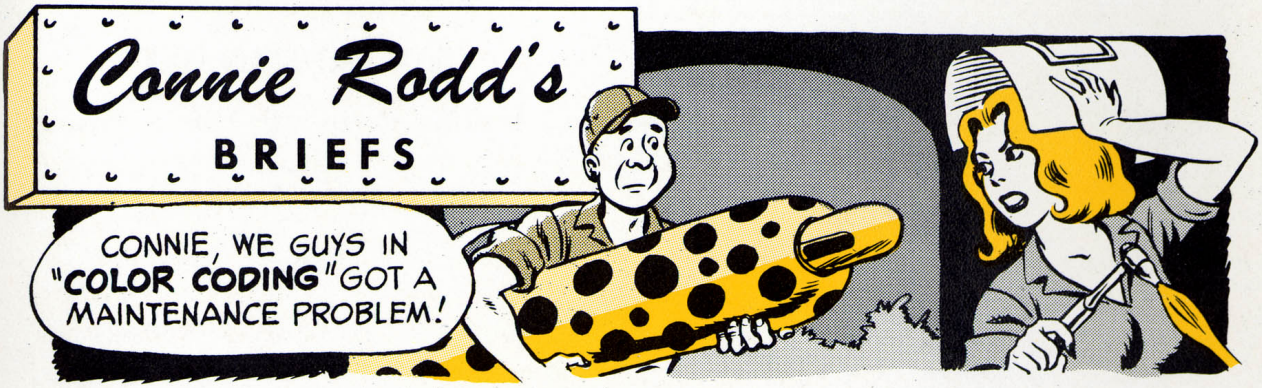
CHECK THAT DRAIN COCK

A leaking drain valve on the fuel-injector pump of the Waukesha, 150-KW generator (FSN 6115-600-3404) will give you starting troubles for sure. It'll let in air and block fuel feed. So when your Waukesha has a bum valve ask for Cock, drain, fuel injection pump, P/N 211220, FSN 2910-831-7291.

BOOST THAT TOP TORQUE

While your big kilowatt-kicker, the 175KW Waukesha 6NKDBS-EU1, is in the shop for fuel drain first aid, best also do some PM on cylinder head and precombustion chambers. Lots of these units break down . . . crack the head or prefire recess.

Best bet is to be sure gaskets and O-rings are good, then go up to 4750 or 4800 in-lb on the head bolts, and drop the precombustion bolt torque to between 650 and 700 in-lb. The engineer types find these figures give better results than those in the TM.



Oh-Oh, Look Again!

Hope you M85 machine gunners caught it. The picture on page 45 of PS 178 showed the .50-cal linked ammo facing exactly backwards. When you go to load linked .50-cal ammo in your M85 make sure the long piece (finger) on the link goes all the way to the rear of the round . . . so the end of the link fits into the ring cut in the round. Otherwise, the ammo won't feed and will bind or bend the cover. Spread the word, will you?

Ship Back Reparables

Before you scrap a chopper main rotor blade be sure you eye the blade damage limits in the bird organizational maintenance pub. And remember — if you or your support can't restore a reparable blade . . . a CONUS depot can.

Model Switch?

If — per chance — the T53-L13 engine in your Huey H Model gets replaced by another engine model, remember to change the bird back to a D Model. Paperwork changes should include an appropriate entry in the remarks column of aircraft inventory, status and flying time, DA form 1352. Mox nix on model designation for MWO compliance . . . use the bird serial numbers.

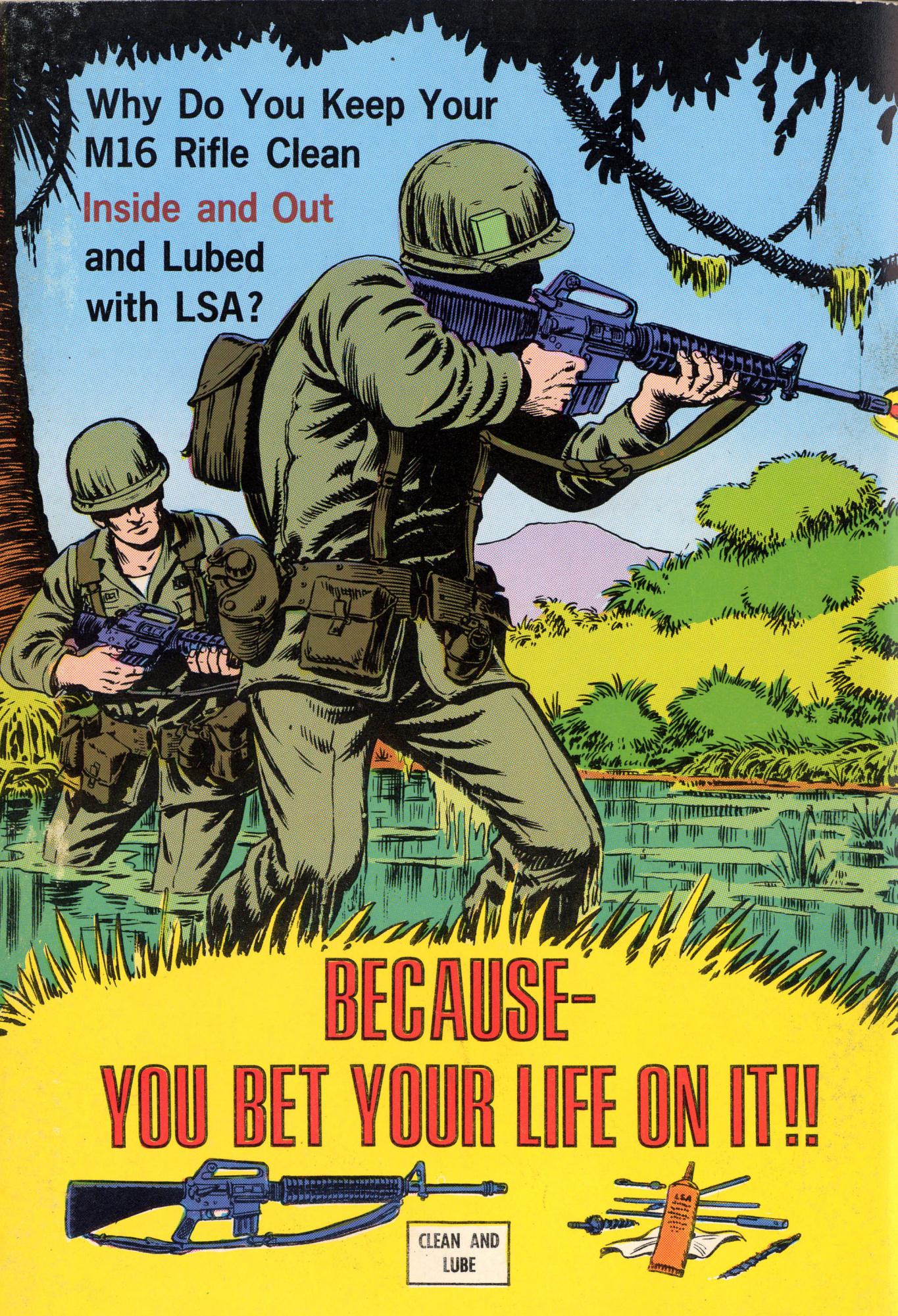
Depronged Wrong

Trying to use one of the new 3-prong extension cords with old-style 2-lead tools or base plugs, lots of people hacksaw off the round prong. That could be — and often is — fatal. Use the adapter, FSN 5935-552-4372, and ground that pigtail to the tool or a ground post . . . and postpone your funeral.

RPM CHANGE

The new **MAXIMUM RPM** under load for your **LDS** 465-1 and -1A 5-ton multifuel truck engine is **2600**. The new maximum no-load **RPM** is **2900**. If your engine will do more than **2900 RPM** at full throttle (take it easy!) with no load (in neutral), get it to your support—right now. Watch for a **TWX** from **ATAC** on this **RPM** change.

Would You Stake Your Life right now on the Condition of Your Equipment?


Why Do You Keep Your
M16 Rifle Clean
Inside and Out
and Lubed
with LSA?
BECAUSE-
YOU BET YOUR LIFE ON IT!!
CLEAN AND
LUBE
LSA